



The 2nd International and the 5th National congress on Endometriosis and Minimally Invasive Gynecology

Dates: December 20-22, 2023

Call for papers

Paper submission deadline: October 22, 2023

(EMIG 2023)

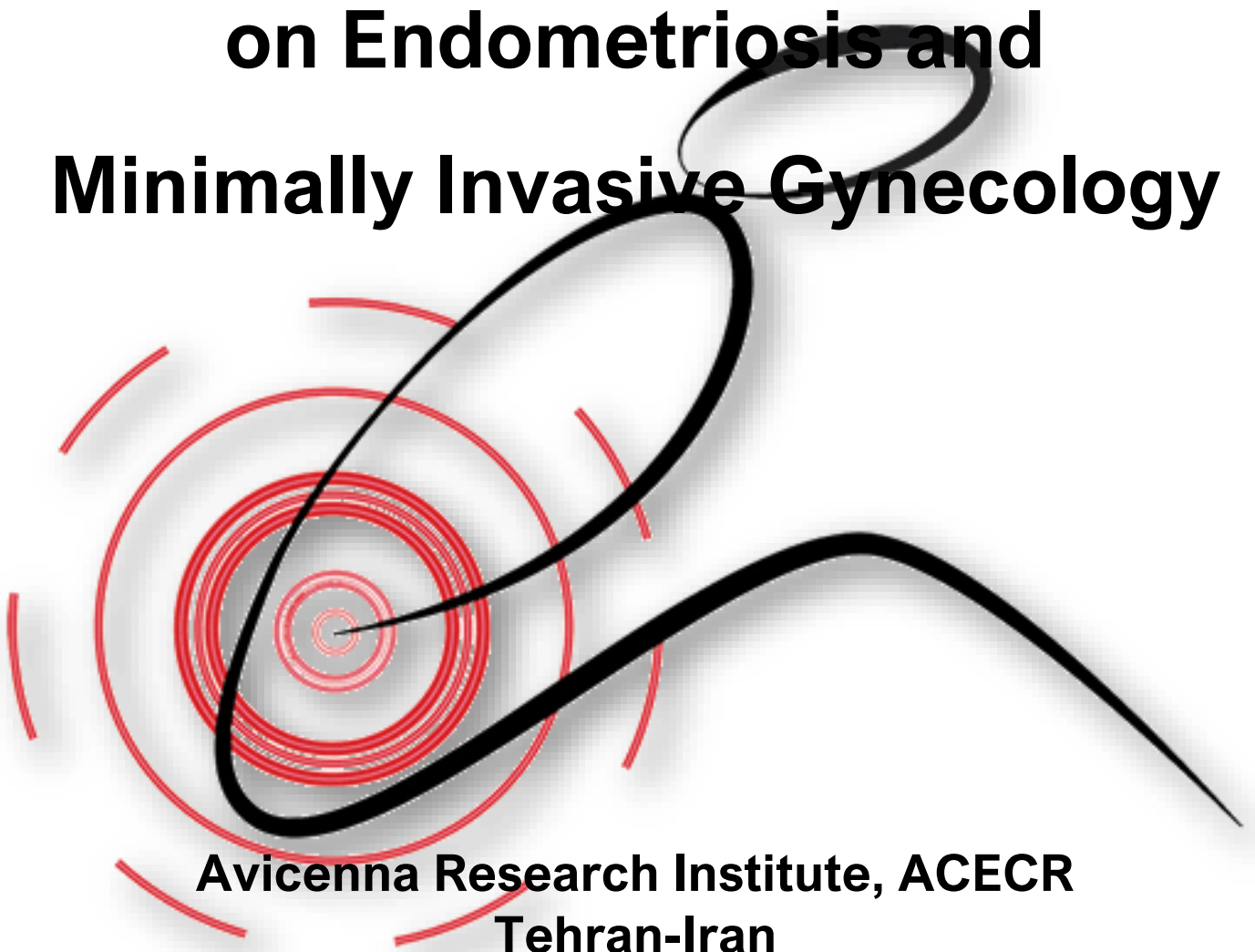
Congress on Endometriosis and
Minimally Invasive Gynecology

5



In the Name of God

**The 5th National and
The 2nd International Congress
on Endometriosis and
Minimally Invasive Gynecology**



**Avicenna Research Institute, ACECR
Tehran-Iran**

19-22 December 2023



**The 2nd International and
The 5th National Congress on Endometriosis
and Minimally Invasive Gynecology**



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The authors will bear full responsibility for the accuracy of their English abstracts



The 2nd International and The 5th National Congress on Endometriosis and Minimally Invasive Gynecology



A Message from the Congress President

Under the auspices of Almighty God, Avicenna Research Institute (ARI)-ACECR will hold "The 2nd International and the 5th National Congress on Endometriosis and Minimally Invasive Gynecology (EMIG 2023)" on December 19-22, 2023.

All our team members anticipate the vibrant participation, extensive collaboration, and support of great national and international scientists for dissemination and propagation of recent news and breakthroughs in the field and exchange of vantage points to share experiences in an amicable platform.

We are honored to welcome your valuable comments and feedbacks to hold this great scientific event as productively as possible, and we sincerely appreciate your presence and participation as a precious asset to increment the richness and credibility of this great international congress.

Mohammad Reza Sadeghi

Chairman of Avicenna Research Institute and President of the Congress



The 2nd International and The 5th National Congress on Endometriosis and Minimally Invasive Gynecology



A Message from Scientific Secretariat of the Congress

Under the auspices of Almighty God, we have reaped substantial benefits including new experiences, scientific implications, and achievements from the previous congress established nearly one year ago. In the past, we have witnessed the invaluable contributions of scientific communities, where distinguished individuals come together to collectively explore and generate new ideas and insights. This collaborative approach has proven to be highly effective in fostering the development of innovative thoughts and deepening our understanding of various phenomena. Once again, our intention is to create a similar community where we come together, with a heartfelt prayer for the alleviation of patient suffering and the healing of those affected. In this community, we aim to exchange experiences, share diverse viewpoints, and engage in discussions focused on scientific advancements and practical procedures.

Epidemiology of Endometriosis, Genetics, and Epigenetics, Surgical Treatment of Endometriosis, Fertility and Fertility Preservation in Endometriosis, Anatomy in Laparoscopic Surgery, New Treatments in Endometriosis, Surgery for Adenomyosis and Medications, Laparoscopic Hysterectomy, Endometriosis Pathology and Biomarkers, Quality of Life in Endometriosis Patients, Nursing and Midwifery Considerations in Endometriosis Surgery, the Role of Nutrition in Endometriosis, Panel Discussion in Endometriosis Surgery, the Role of Imaging in Endometriosis, Legal and Ethical Aspects in Laparoscopic Surgery of Endometriosis, Myomas and Medication-related Treatments Besides Surgery, Hysteroscopy, and Complications and Their Management in Endometriosis Surgery are the chief targets in the congress discussions which will be delved into during 19-22 December, 2023.

We will unite like mighty rivers converging into a tranquil sea, working together to alleviate the suffering of individuals. In this crucial endeavor, we extend a helping hand to you, and together, we aspire to take a meaningful stride towards the growth and development of our beloved country, Iran.

I KEEP MY EYES ON YOUR WAY (Nima Yooshij – The Father of Modern Persian Poetry)

Dr. Khadijeh Shadjoo

Faculty Member of Avicenna Research Institute and the Scientific Secretariat of the Congress



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Dr. Mohammad Reza Sadeghi
Congress President



Dr. Khadijeh Shadjoo
Scientific Secretariat



Safoora Soleimani Fakhr
Executive Secretariat



Dr. Atefeh Gorgin
Scientific Secretariat Deputy



Reyhaneh Karimi
Executive Secretariat Deputy



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Intellectual Supports





The 2nd International and The 5th National Congress on Endometriosis and Minimally Invasive Gynecology



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داروسازی فروغ سلامت



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Dr. Seyedeh Safoora Roholamin
Dr. Samaneh Rokhgireh
Razieh Saber Shahraki
Dr. Ali Sadeghitabar
Dr. Mansooreh Samimi
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Prof. Hemantha Senanayake
Dr. Khadijeh Shadjoo
Dr. Shadab Shahali
Dr. Naghi Shahabi Majd
Dr. Khashayar Shakiba
Prof. Srinivasan Krishnamurthy
Prof. Adel Shervin
Prof. Hooman Soleymani Majd
Safoora Soleimani Fakhr
Dr. Haleh Soltanghorae
Dr. Fatemeh Tabatabaee
Dr. Arman Taheri
Dr. Kobra Taherimanesh
Dr. Robabeh Taheripanah
Dr. Banafsheh Tajbakhsh
Prof. Togas Tulandi
Dr. Hossein Yousef Fam
Prof. Taner Usta
Dr. Shahrzad Zadeh Modares
Dr. Ziba Zahiri
Dr. Mitra Zandi
Dr. Amir Hasan Zarnani



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Executive Committee

(In Order to English Alphabet)

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Oreinab Azimi
Farnoosh Azizi
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Mohammadmahdi Barfar
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Yahya Ebrahimi
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Dr. Ghazaleh Ganjipour
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Azadeh Hajiparvaneh
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Safoora Soleimani Fakhr
Maryam Takaloo
Saeedeh Zamani



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Scientific Committee Biography



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Prof. Mauricio Abrão

- Coordinator of the Advanced Center for Gynecology and Minimally Invasive Gynecology Surgery at Hospital BP - A Beneficencia Portuguesa de São Paulo
 - Associate Professor at the Department of Obstetrics and Gynecology at FMUSP (Faculty of Medicine University of Sao Paulo, Brazil)
 - Editor-in-Chief of the Journal of Endometriosis and Pelvic Pain Disorders
-



Prof. Hooman Soleymani Majd

- Honorary Senior Clinical Lecturer in Gynaecological Oncology surgery at Oxford University Consultant in Gynaecological Oncology at the Churchill Hospital, Oxford
 - BSCCP accredited Colposcopist and trainer
 - Member of the British Gynaecological Cancer Society (BGCS)
-



Prof. Shaheen Khazali

- Senior lecturer at The Royal Holloway University of London
 - Consultant Gynecologist and Endopelvic surgeon at the Centre for Endometriosis and Minimally Invasive Gynaecology (CEMIG), Ashford and St. Peter's Hospital NHS Foundation Trust, HCA The Lister Hospital in London
-



Prof. Nicholas Leyland

- Professor and Chair of the Department of Obstetrics and Gynecology at McMaster University, Canada
 - Nationally Recognized Leader in Women's Health and Gynecological Surgery
-



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Prof. Mohamed Mabrouk

- Gynecologist at Cambridge Endometriosis and Endoscopic Surgery Unit (CEES-U), Cambridge University Hospitals NHS Foundation Trust and Addenbrooke's Hospital
 - Assistant Professor of Obstetrics and Gynecology at Alexandria University, Egypt and the President of the Middle East Society of Gynecological Endoscopy (MESGE)
-



Prof. Alexander Popov

- Head of the department of operative gynecology with oncogynecology with day hospital in the Moscow Regional Scientific Research Institute of Obstetrics and Gynecology
 - Member of Russian Association of Human Reproduction (RAHR), Russian Association of Endoscopic Gynecologists (RAEG), Russian Association of Endometriosis (RAE)
-



Prof. Camran Nezhat

- Clinical Professor of Obstetrics and Gynecology at School of Medicine, University of California, San Francisco
 - Adjunct Professor at the Medical University of Vienna in Austria
 - Director of Center for Special Minimally Invasive and Robotic Surgery and director of Camran Nezhat Institute
-



Prof. Adel Shervin

- Former Chairman of Department of Obstetrics and Gynecology at North Iowa Medical Center and Hutchinson Hospital, Iowa and Kansas, USA
 - Honorary Professor in Obstetrics and Gynecology at Tehran University of Medical Science, Tehran, Iran
-

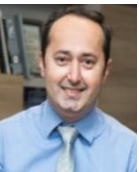


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Prof. Farr Nezhat

- Clinical professor of obstetrics and gynecology at Weill Cornell Medical College of Cornell University, New York
 - Chief of the Division of Minimally Invasive Gynecologic Surgery and director of the Minimally Invasive and Robotic Gynecologic Surgery Fellowship at NYU Grossman Long Island School of Medicine, New York
 - Adjunct professor at NYU Grossman Long Island School of Medicine, Mineola, New York
 - Medical Director of Nezhat Surgery for Gynecology/Oncology
-



Prof. Taner Usta

- Professor in obstetrics and gynecology at Acibadem Altunizade Hospital, Istanbul
 - Member of the scientific board of the American Association of Gynecologic Laparoscopy (AAGL), Member of the Board of Directors of the European Endometriosis League (EEL), and the Society of Gynecologic Endoscopy (ESGE)
-



Prof. Gaby Moawad

- The founder of Center for Endometriosis & Advanced Pelvic Surgery (CEAPS)
 - Director of Robotic Gynecologic Surgery, Fellowship Co-Director, and an Associate Professor in Obstetrics and Gynecology at The George Washington University
 - Received AAGL Award for Excellence in Endoscopic Procedures from the American Association of Gynecologic Laparoscopists (AAGL)
-



Prof. Khashayar Shakiba

- Assistant Professor at Department of Obstetrics and Gynecology of Hackensack Meridian School of Medicine at Seton Hall University, New Jersey
-



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Prof. Jessica Papillon-Smith

- Assistant Professor at Department of Obstetrics & Gynecology, McGill University, Canada
 - Clerkship Site Director at Royal Victoria Hospital, Canada
 - Quebec Gynecologic Clinical Practice Representative for the SOGC, and an active member of the CanSAGE association
-



Prof. Srinivasan Krishnamurthy

- Vice chair of education, director of gynecology, and associate professor in obstetrics and gynecology at McGill University and McGill University Health Centre, Canada
 - Received certification of higher training from the Royal College of Obstetricians and Gynecologists
 - Fellowship in pelvic surgery
-



Prof. Togas Tulandi

- Past president of the Council for Gynecologic Endoscopy, the Society of Reproductive Surgeons, the Canadian Fertility and Andrology Society, and the Fellowship Board of the American Association for Gynecologic Laparoscopists
 - Professor and Chair of Obstetrics and Gynecology, and Milton Leong Chair in Reproductive Medicine at McGill University, Canada
 - Editor-in-Chief of the Journal of Obstetrics and Gynaecology Canada
-



Prof. Moamar Al-Jefout (UAE)

- Associate professor at the College of Medicine and Health Sciences at the United Arab Emirates University
 - President of the Asian Society of Endometriosis and Adenomyosis
-



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Prof. Angela S. Aguilar (Philippines)

- President of the Philippine Society for Gynecologic Endoscopy and the Public Relations Officer of the Philippine Society for Reproductive Medicine
 - Associate professor of the Section of Reproductive Endocrinology and Infertility at the Department of Obstetrics and Gynecology, University of the Philippines - Philippine General Hospital
 - Member of Asian Society of Endometriosis and Adenomyosis
-



Prof. Pietro Santulli (France)

- Clinical and scientific director of the Reproductive Medicine Unit in the department headed by Prof. Charles Chapron at Cochin University Hospital
-



Prof. Hemantha Senanayake (Sri Lanka)

- Professor at University of Colombo, Sri Lanka
 - Member of Asian Society of Endometriosis and Adenomyosis
-



Dr. Tahereh Pourdast

- Obstetrician and Gynecologist
 - Fellowship in laparoscopy
 - Associate professor of Shiraz University of Medical Sciences
-



Dr. Mahrooz Malek

- Associate professor of radiology at Tehran University of Medical Sciences
 - Fellowship in women's imaging
-



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Dr. Soheila Ansaripour

- Obstetrician and Gynecologist at IVF center of Mehr Hospital
 - Associate professor at Avicenna Research Institute
 - Member of European Society for Reproductive Immunology (ESRI)
-



Dr. Zahra Heidar

- Obstetrician and Gynecologist
 - Fellowship in infertility
 - Associate Professor of Shahid Beheshti University of Medical Sciences
-



Dr. Marziyeh Parizad

- Obstetrician and Gynecologist
 - Fellowship in endoscopic gynecology and endometriosis
 - Assistant professor of Tabriz University of Medical Sciences
-



Dr. Mansooreh Samimi

- Obstetrician and Gynecologist
 - Fellowship in advanced laparoscopy from Iran University of Medical Sciences
 - Assistant Professor at Kashan University of Medical Sciences
-



Dr. Firouzeh Ghaffari

- Obstetrician and Gynecologist
 - Fellowship in infertility from Tehran University of Medical Sciences
 - Associate professor at Royan Institute
 - Technical manager of Female Infertility Department of Royan Institute
-



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Dr. Khadijeh Shadjoo

- Obstetrician and Gynecologist
 - Fellowship in advanced laparoscopy and endometriosis
 - Member of Iranian Society of Minimally Invasive Surgery
 - Director of Endometriosis Clinic at Avicenna Fertility Center
 - Gynecologist and laparoscopist of Erfan Hospital
 - Member of Society of Endometriosis and Uterine Disorders (SEUD)
-



Dr. Mahboobeh Azadehrah

- Obstetrician and Gynecologist
 - Fellowship in advanced laparoscopy and hysteroscopy
 - Assistant professor of Golestan University of Medical Sciences
-



Dr. Behzad Ghorbani

- Psychiatrist, Research Assistant, and Professor at Avicenna Research Institute
 - Manager of Reproduction Health Research Group
-



Dr. Abolfazl Mehdizadeh Kashi

- President of the Iranian Society of Minimally Invasive Gynecology,
 - Director of Minimally Invasive Surgery in Gynecology Fellowship program
 - Head of Obstetrics and Gynecology Ward of Rasool-Akram Hospital
 - Professor of obstetrics and gynecology at Iran University of Medical Sciences
 - Fellowship in minimally invasive surgery
 - Director of Endometriosis Research Center of Iran University of Medical Sciences
-



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Dr. Saeed Alborzi

- Professor and chair of Department of Obstetrics and Gynecology, Shiraz University of Medical Sciences



Dr. Fatemeh Hajibabae

- Assistant Professor at School of Nursing and Midwifery of Tehran University of Medical Sciences (TUMS)



Dr. Safoura Rouholamin

- Obstetrician and Gynecologist Specialist in Advanced Laparoscopy, Hysteroscopy, and Endometriosis surgery
- Fellowship in Minimally Invasive Surgery



Dr. Zahra Asgary

- Fellowship in Gynecology Laparoscopy
Professor and head of laparoscopy fellowship program of Tehran University of Medical Sciences



Dr. Kobra Tahermanesh

- Obstetrician and gynecologist
- Associate professor of Iran University of Medical Sciences
- Fellowship in minimally invasive gynecology surgery
- Gynecologist at Rasool-e Akram Tertiary Hospital



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Dr. Behnaz Ghavami

- Obstetrician and gynecologist
 - Laparoscopic surgeon at Arash women hospital
 - Fellowship in Minimally Invasive Gynecologic Surgery (FMIGS)
-



Dr. Fahimeh Ranjbar

- PhD in reproductive health from Tehran University of Medical Sciences
 - Assistant professor at Nursing and Midwifery Care Research Center of Iran University of Medical Sciences
-



Dr. Shadab Shahali

- PhD in Reproductive Health
 - Assistant professor of Department of Reproductive Health and Midwifery, Tarbiat Modares University
-



Dr. Leila Bayani

- Head of Radiology Department at Arash Women Hospital
 - Board certified radiologist
-



Dr. Samaneh Rokhgireh

- Faculty member at Iran University of Medical Sciences
 - Associate professor of laparoscopic surgery
 - Fellowship in advanced gynecology and minimally invasive surgery
-



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Dr. Mitra Zandi

- PostDoc and PhD in nursing, graduate of Tarbiat Modares University
 - Associate professor of nursing at Shahid Beheshti University of Medical Sciences
 - Fellowship in electronic learning
-



Dr. Ameneh Haghgoo

- Obstetrician and gynecologist
 - Fellowship in advanced laparoscopy and hysteroscopy
 - Head of minimally invasive gynecological surgery of Nikan hospital
-



Dr. Abbas Aflatoonian

- Professor of obstetrics and gynecology at Shahid Sadoughi University of Medical Sciences
 - Founder of Yazd Reproductive Sciences Institute
 - Founder of Yazd Madar Hospital
 - Editor in chief of International Journal of Reproductive Biomedicine
-



Dr. Naser Amirjannati

- Urologist, Faculty member of Avicenna Research Institute, ACECR, Tehran, Iran
-



Dr. Atieh Mansouri

- Obstetrician and Gynecologist
 - Associate professor of Mashhad University of Medical Sciences
 - Leader of OB/GYN SOS group
-



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Dr. Elham Akbari

- Obstetrician and Gynecologist
 - Assistant professor of Shahid Beheshti University of Medical Sciences and Shohadaye Tajrish Hospital
 - Head of operating department of Farmanieh hospital
-



Dr. Ali Akbar Delbandi

- Faculty member at Department of Immunology, School of Medicine of Iran University of Medical Sciences
-



Dr. Mohammad Ebrahim Parsanezhad

- M.D., Obstetrician and Gynecologist
 - Fellowship in Infertility
 - Professor of Shiraz University of Medical Sciences
-



Razieh Saber

- BSc in Midwifery
 - Former Manager of Replacement Therapies Clinic
 - Supervisor of Pelvic Pain, Endometriosis and Advanced Laparoscopy Clinic
-



Dr. Reza Omani Samani

- Head of Department of Medical Ethics and Law at Royan Institute
 - Member of ethical committee of University of Science and Culture, Shahid Rajaee and Tarbiat Modares universities
-



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Dr Mania Kaveh

- Obstetrician and Gynecologist
 - Fellowship in minimally invasive gynecologic surgery
 - Associate professor and head of Department of Obstetrics and Gynecology at Zabol University of Medical Sciences
 - Member of the International Society for Gynecologic Endoscopy
 - Member of Iranian Society for Gynecologic Endoscopy
-



Dr. Maryam Deldar

- Obstetrician and Gynecologist
 - Fellowship in female pelvic medicine and reconstructive surgery
 - Associate professor of Tehran University of Medical Sciences, Imam Khomeini Hospital
-



Dr. Mehri Mashayekhy

- Obstetrician and Gynecologist
 - Fellowship in female infertility
 - Faculty member at Department of Endocrinology and Female Infertility of Royan Institute
-



Dr. Elham Askari

- Obstetrician and gynecologist
 - Assistant professor of obstetrics and gynecology at Shiraz University of Medical Sciences
 - Fellowship in laparoscopic surgery and endometriosis from Shiraz University of Medical Sciences
 - Member of Iranian Association of Endoscopic Surgeons
-



Dr. Sedigheh Hosseini

- Obstetrician and Gynecologist
 - Fellowship in infertility
 - Faculty member of Shahid Beheshti University of Medical Sciences
-



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Dr. Haleh Soltangharaee

- Associate professor of Personalized Medicine in Reproductive Health Research Group at Avicenna Research Institute
 - Clinical pathologist
 - Fellowship in perinatal and pediatric pathology
 - Technical director of pathology lab of Avicenna Fertility Center
-



Dr. Soudabeh Kazemi

- Obstetrician and Gynecologist
 - Fellowship in perinatology
 - Associate professor of Gilan University of Medical Sciences
-



Dr. Mohammad Kazemian

- Forensic Medicine Specialist
 - Chairman of Association of Forensic Physicians of Iran
 - Treatment Deputy of Ebnesina Hospital, Tehran, Iran
-



Dr. Saman Mohammadipour

- Assistant professor of Islamic Azad University
 - Fellowship in colorectal surgery
 - Consultant colorectal surgeon at Avicenna Fertility Center
 - Member of Iranian Coloproctology Society
 - Member of Iranian Continence Society (IrCS)
 - Member of International Society of University Colon and Rectal Surgeon
-



Dr. Elnaz Hosseini

- Obstetrician and Gynecologist at Firoozgar hospital, Iran University of Medical Sciences
 - Fellowship in Minimally Invasive Gynecology
-



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Dr. Zinat Ghanbari

- Obstetrician and Gynecologist
 - Fellowship in Female Pelvic Medicine and Surgery
 - Head of Obstetrics and Gynecology group at Tehran University of Medical Sciences
-



Fariba Mohammadi

- Head nurse of operating room at Avicenna Fertility Center
-



Dr. Nasrin Changizi

- Obstetrician and Gynecologist
 - Fellowship in female pelvic medicine and reconstructive surgery
 - Associate professor at Ministry of Health and Medical Education (MOHME)
-



Dr. Soodabeh Darvish

- Obstetrician and Gynecologist
 - Associate professor at Shahid Beheshti University of Medical Sciences
 - Fellowship in pelvic floor disorder and neuropelviology
-



Dr. Maryam Hafezi

- Obstetrician and Gynecologist
 - Fellowship in Infertility Training Program
 - Assisted Professor at Endocrinology and Female Infertility Department of Royan Institute
 - Editorial board member of International Journal of Fertility and Sterility
-



The 2nd International and The 5th National Congress on Endometriosis and Minimally Invasive Gynecology



Dr. Banafsheh Tajbakhsh

- Obstetrician and Gynecologist
 - Fellowship in minimally invasive gynecologic surgery
 - Member of International Society for Gynecologic Endoscopy (ISGE)
 - Member of Iranian Society for Gynecologic Endoscopy
 - Member of Iranian Society for Gynecology Oncology
-



Dr. Farhad Assarzagdegan

- Assistant professor of neurology at Shahid Beheshti University of Medical Sciences and Imam Hossein Hospital
-



Nasim Kalantari

- Msc in Nursing
 - Scrub nurse in laparoscopy and surgical technologist at Avicenna Fertility Center
-



Dr. Ziba Zahiri

- Obstetrician and Gynecologist
 - Full professor of Guilan University of Medical Sciences
 - Fellowship in IVF and infertility
 - Certified in advanced laparoscopy, hysteroscopy, and endometriosis ultrasound
 - Head of infertility and IVF department and the education deputy of Al-Zahra Hospital in Rasht
-



Dr. Parisa Mostafaei

- Obstetrician and Gynecologist Fellowship in infertility and IVF Member of department of endocrinology and female infertility at Royan Institute
-



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Bahareh Abbasi

- Member of specialized team at Avicenna Fertility Center
 - Former member of the British Society for Gynaecological Endoscopy (BSGE) in 2014-2017
 - Nursing supervisor of inpatient department at Avicenna Fertility Center in 2011-2013
-



Safoora Soleimani Fakhr

- Education deputy and manager of Public Relations Office
 - Avicenna Research Institute, ACECR, Tehran, Iran
-



Dr. Ali Sadeghitabar

- PhD MLD,
 - Manager of Avicenna Fertility Center
 - Faculty member of immunochemistry research group at Avicenna Research Institute (ARI), Tehran, Iran
 - Technical director of medical diagnostic laboratory of Avicenna Fertility Center
-



Dr. Azamsadat Mahdavi

- Obstetrician and gynecologist
 - Fellowship in infertility and laparoscopy from France
 - Member of the specialized team at Avicenna Fertility Center
-



Dr. Hossein Ashegh

General surgeon Laparoscopy specialist Head of Laparoscopy Training Center of Tehran University of Medical Sciences



Dr. Ali Mahdavi

- Board certified radiologist
 - Fellowship of interventional radiology
 - Assistant professor of radiology at shahid Beheshti University of medical science
-



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Dr. Atieh Javaheri

- Obstetrician and Gynecologist Faculty member at Shahid Sadoughi University of Medical Sciences
 - Fellowship in gynaecological endoscopy
 - Editorial board member of Journal of Shahid Sadoughi University of Medical Sciences
-



Dr. Afsaneh Mohammad Zadeh

- Gynecologist, fellowship in IVF and Assisted Reproductive Technology
 - Associate professor at Avicenna Research Institute
 - Head of Department of Infertility Fellowship Training Programs at Avicenna Fertility Center
-



Dr. Maryam Ashrafi

- Obstetrician and Gynecologist of Arash Hospital
 - Faculty Member of Tehran University of Medical Sciences
 - Fellowship in Gynecologic Laparoscopic Surgeries and Pelvic Floor Disorders
-



Dr. Arman Taheri

- MD, Anesthesiologist, and Faculty member of Tehran University of Medical Sciences
 - Fellowship in Interventional Pain Practice (FIPP)
 - Fellowship in Medical Education
-



Dr. Hossein Asefjeh

- Obstetrician and gynecologist
 - Fellowship in laparoscopic surgery
 - Member of American Association of Gynecologic Laparoscopy
 - Member of Iranian Society of Surgeons
-



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Dr. Hamid Reza Namazi

- MD, PhD in Medical Ethics
 - Faculty Member at Medical Ethics and History of Medicine Research Center of Tehran University of Medical Sciences
 - Head of Iranian National Museum of Medical Sciences History
-



Dr. Alireza Parsapour

- MD, PhD in Medical Ethics
 - Assistant Professor of Tehran University of Medical Sciences
 - Member of the Board of Medical Ethics of Ministry of Health and Medical Education
-



Dr. Mohammad Hadi Radfar

- Urologist
 - Fellowship in Endourology and Laparoscopy
 - Associate Professor of Shahid Beheshti University of Medical Sciences
-



Dr. Setareh Akhavan

- Obstetrician and Gynecologist
 - Fellowship in Gynecologic Oncology
 - Professor of Tehran University of Medical Sciences
-



Dr. Kamran Aghakhani

- Forensic Medicine Specialist
 - Faculty Member of Tehran University of Medical Sciences
-



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Dr. Ashraf Moeini

- Faculty member at Tehran University of Medical Sciences
 - Fellowship in infertility
 - Member of specialized team at Royan Institute
-



Dr. Ashraf Alyasin

- Obstetrician and Gynecologist
 - Fellowship in perinatology
 - Professor at Tehran University of Medical Sciences
-



Dr. Shahrzad Zadeh Modarres

- Obstetrician and Gynecologist
 - Fellowship in infertility
 - Professor of Shahid Beheshti University of Medical Sciences
-



Dr. Robabeh Taheripanah

- Obstetrician and gynecologist
 - Fellowship in infertility
 - Faculty member of Shahid Beheshti University of Medical Sciences (SBUMS)
 - Research deputy of Infertility and Reproductive Health Research Center at SBUMS
-



Dr. Atefeh Gorgin Karaji

- Obstetrics and Gynecologist,
Fellowship in advanced laparoscopic surgery and endometriosis
 - Member of the specialized team at Avicenna Fertility Center
-



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Dr. Marzieh Farimani

- Obstetrician and Gynecologist
 - Associate Professor of Hamadan University of Medical Sciences
 - Head of Omid Infertility Center
-



Dr. Shahla Chaichian

- Professor of obstetrics and gynecology at Islamic Azad University of Medical Sciences
 - Fellowship in minimally invasive surgeries
 - Secretary of Iranian Society of Minimally Invasive Gynecology (ISMIG)
 - Member of Iranian Academy of Medical Sciences
 - Deputy of science of Endometriosis Research Center of Iran University of Medical Sciences
 - Deputy of science at Pars Advanced and Minimally Invasive Medical Manners Research
-



Dr. Roya Derakhshan

- Obstetrician and Gynecologist
 - Fellowship in Minimally Invasive Gynecologic Surgery (FMIGS)
 - Assistant Professor of Iran University of Medical Sciences (IUMS)
-



Dr. Saeed Arasteh

- Urologist at Avicenna Fertility Center
 - Fellowship in kidney transplantation
 - Member of Iranian Urological Association (IUA)
 - Member of European Association of urology (EAU)
 - Member of Iranian Society for Reproductive Medicine
-



Dr. Behrang Abadpour

- Urologist
 - Fellowship in kidney transplantation
 - Urologist at Avicenna Fertility Center
-



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Dr. Saeed Reza Ghaffari

- Genetic Specialist



Dr. Amirhasan Zarnani

- Immunologist
 - Fellowship in reproductive immunology
 - Head of Department of Immunology, School of Public Health at Tehran University of Medical Sciences
 - Faculty member of Reproductive Immunology Research Center at Avicenna Research Institute
 - Member of European Society for Reproductive Immunology (ESRI)
 - Founder of reproductive immunology research center of Avicenna Research Institute
-



Dr. Alireza Chamani Tabriz

- Anesthesiologist
 - Operating Room Manager at Avicenna Fertility Center
 - Anesthesiologist of specialized team of endometriosis at Avicenna Fertility Center since 2010
 - Head of Anesthesiology Department and Intensive Care Unit at Avicenna Fertility Center
-



Dr. Roya Padmehr

- Obstetrician and gynecologist fellowship in advanced laparoscopic surgery in gynecology and endometriosis
 - Instructor of Laparoscopy and Hysteroscopy courses
 - Member of Iranian society of Minimally Invasive Surgery
 - Member of Iranian Obstetrics and gynecology society
 - Member of Medical council of The Islamic Republic of Iran
-



Dr. Zatollah Asemi

- PhD, Associate Professor of Nutritional Sciences
 - Department of Nutrition, School of Medicine Research Center for Biochemistry and Nutrition in Metabolic Diseases
 - Institute for Basic Sciences Kashan University of Medical Sciences, Iran
-



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Dr. Roxana Kargar

- Obstetrics and Gynecology specialty board from Shahid Beheshti University of Medical Sciences in 2012
 - Fellowship in advanced laparoscopic surgery and endometriosis from Avicenna Research Institute in 2016
 - Member of specialized team of Avicenna Fertility Center since 2017
-



Dr. Soheila Arefi

- Fellowship in infertility
 - Associate Professor of
 - Avicenna Research Institute
-



Dr. Behnaz Nouri

- Obstetrician and Gynecologist
 - Assistant professor of Shahid Beheshti University of Medical Sciences and Shohadaye Tajrish Hospital
-



Dr. Fatemeh Tabatabaei

- Gynecologist Faculty member at Tabriz University of Medical Sciences
-



Dr. Sarah Bahramzadeh

- Obstetrician and Gynecologist at Avicenna Fertility Center Fellowship of endometriosis
-



Dr. Arash Mohazzab

- Doctor of Medicine (MD) from Shahid Beheshti University of Medical Sciences
 - PhD in Epidemiology at Iran University of Medical Sciences
 - Research Consultant at Avicenna Research Institute (ARI)
 - Member of Clinical Trial Center at Iran University of Medical Sciences
-



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Dr. Shahla Nouri Ardabili

- Obstetrician and gynecologist
 - Fellowship in advanced laparoscopy
 - Member of Iranian Association of Endoscopic Surgeons
 - Member of International Society for Gynecologic Endoscopy
 - Member of National Association of Iranian Obstetricians and Gynecologist
-



Dr. Leili Hafizi

- Obstetrician and gynecologist
 - Associate professor of Mashhad University of Medical Sciences
 - Fellowship in female advanced endoscopy from Tehran University of Medical Sciences
-



Dr. Alireza Milani far

- MD, LL.B, MPH
 - PhD in Medical Ethics and Law
 - Faculty member of Biolaw and Ethics Research Group at Avicenna Research Institute (ARI)
-



Dr. Nasim Naseri

- Radiologist
 - Fellowship in breast imaging from Tehran University of Medical Sciences
 - Member of specialized team at Avicenna Fertility Center
-



Dr. Shahrzad Ansari

- Obstetrician and gynecologist at IVF center of Mehr hospital
 - Obstetrics and gynecology specialty board
 - Specialist in advanced hysteroscopy, laparoscopy, and IVF
 - Senior gynecologist and infertility specialist at Day General Hospital
-



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Dr. Ladan Giahi

- PhD in Biological and Life Sciences from University of Vienna (Immunonutrition)
 - Assistant professor of Avicenna Research Institute and Avicenna Fertility Center
-



Dr. Fatemeh Mohammad Najjar

- Obstetrician and Gynecologist
 - Vice President of National Association of Iranian Gynecologists and Obstetricians
-



Dr. Malek Mansour Aghssa

- Fellowship in infertility Faculty member of Tehran University of Medical Sciences Member of International Society of Gynecological Endocrinology (ISGE)
 - Member of American Society of Reproductive Medicine (ASRM) Member of European Society of Human Reproduction and Embryology (ESHRE)
-



Dr. Hossein Yousef Fam

- General Surgeon
 - Fellowship in Colorectal Surgery
 - Member of European Society of Coloproctology Board member of Iranian Coloproctology Society
-



Keynote Lecturers

1.	Prof. Mohammad Mabrouk	UK
2.	Prof. Nicholas Leyland	Canada
3.	Prof. Mauricio Abrão	Brazil
4.	Prof. Shaheen Khazali	UK
5.	Prof. Togas Tulandi	Canada
6.	Prof. Srinivasan Krishnamurthy	Canada
7.	Prof. Saeed Alborzi	Iran
8.	Prof. Hooman Soleymani Majd	UK
9.	Dr. Arash Mohazzab	Iran
10.	Prof. Farr Nezhat	USA
11.	Dr. Atefeh Gorgin	Iran
12.	Prof. Jessica Papillon Smith	Canada
13.	Dr. Ladan Giahi	Iran



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Congress Program



The 2nd International and The 5th National Congress on Endometriosis and Minimally Invasive Gynecology



Day 1-Main Hall Program 20 December, 2023

Panel name	Panel chair	Speakers	Time of lectures
Panel members			
Past, Present, and Future of Laparoscopic Surgery	Dr. Khadijeh Shadjoo	Prof. Adel Shervin (USA) Dr. Hossein Ashegh Prof. Camran Nezhat (USA) Dr. Abolfazl Mehdizadeh Kashi Prof. Malek Mansour Aghssa	8:00-9:30
Opening Ceremony (9:30-10:30) Break (10:30-11:00)			
Panel members			
The Role of Imaging and Diagnostic Tests in Management of Endometriosis	Dr. Mahrooz Malek	Dr. Ali Akbar Mahdavi Dr. Nasim Naseri Dr. Elham Askary Dr. Leila Bayani Dr. Ali Sadeghitabar	11:00-12:30
Lunch Break: 12:30-13:30			
Keynote Lecture: Retroperitoneal Pelvic Anatomy (Prof. Mohammad Mabrouk- UK) 13:30-14:00			
Panel members			
Management and Treatment of Endometriomas	Dr. Atefeh Gorgin	Dr. Safoura Rouholamin Dr. Shahrzad Ansari Dr. Atiyeh Mansouri Dr. Atiyeh Javaheri Dr. Haleh Soltanghorae	14:00-15:25
Adhesion Management in Gynecological Surgeries (Dr. Azin Ezzati) 15:25-15:45			
Keynote Lecture: When Not to Do Surgery in Endometriosis (Prof. Nicholas Leyland -Canada) 15:45-16:15			
Panel members			
Surgical Talk Show	Dr. Khadijeh Shadjoo	Prof. Alexander Popov (Russia) Prof. Taner Usta (Turkey) Dr. Ameneh Sadat Haghgoo Prof. Gaby Moawad (USA) Prof. Shaheen Khazali (UK) Dr. Atefeh Gorgin Dr. Roxana Kargar	16:15-18:00



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Day 2-Main Hall Program 21 December, 2023

Panel name	Panel chair	Speakers	Time of lectures
Panel members			
Treatment and Management of NICH	Dr. Zahra Asgari	Dr. Leila Bayani Dr. Maryam Ashrafi Dr. Behnaz Ghavami Dr. Ashraf Moini	8:00-09:30
Keynote Lecture: Pelvic Pain in Endometriosis (Prof. Mauricio Abrão - Brazil) 09:30-10:00			
Break 10:00-10:30			
Panel members			
Adenomyosis (Diagnosis- Medications- Surgery)	Dr. Soheila Arefi	Prof. Ebrahim Parsanejad Prof. Abbas Aflatoonian Dr. Robabeh Taheripanah Dr. Zahra Heidar Dr. Hossein Asefjah Dr. Marzieh Farimani	10:30-12:00
Selecting the Optimal GnRH Treatment for Endometriosis (Dr. Amir Mansour Jalali) 12:00-12:20			
Introduction to Iron Supplements: Fefol (Dr. Zohreh Valinejad) 12:20-12:40			
The Role of Micronutrients on Oocyte Quality (Dr. Robabeh Taheripanah) 12:40-13:00			
Lunch Break: 13:00-13:30			
Panel members			
Deeply Infiltrative Endometriosis (DIE) Diagnosis and Treatment	Prof. Saeed Alborzi	Dr. Khadijeh Shadjoo Dr. Roya Padmehr Dr. Hossein Asefjah Dr. Elham Askary Dr. Tahereh Pourdast Dr. Ziba Zahiri	13:30-15:30
Keynote Lecture: Neuropelvelogy and Pelvic Nerves (Prof. Shaheen Khazali-UK) 15:30-16:00			
Keynote Lecture: Reproductive Surgery Is Distinct from Excisional Surgery (Prof. Togas Tulandi-Canada) 16:00-16:30			
Panel members			
Management of Complications in Endo- metriosis and Laparoscopic Surgery (Case Discussion)	Dr. Roya Padmehr	Prof. Togas Tulandi (Canada) Dr. Saeed Arasteh Dr. Saman Mohammadipour Dr. Atefeh Gorgin Dr. Alireza Chamani Tabriz Dr. Farhad Assarzagdegan	16:30-18:00



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Day 3-Main Hall Program 22 December, 2023

Panel name	Panel chair	Speakers	Time of lectures
Keynote Lecture: Vaginal Adnexectomy - Tips and Tricks (Prof. Srinivasan Krishnamurthy-Canada) 08:00-08:30			
Panel members			
The Role of Surgery in Management of Endometriosis and Infertility	Dr. Ashraf Moini	Dr. Ronbabehe Taheripanah Dr. Sedigheh Hosseini Dr. Khadijeh Shadjoo Dr. Ashraf Alyasin	8:30-10:00
Break: 10:00-10:30			
Keynote Lecture: The First Guidelines for Adenomyosis from ASEA (Prof. Saeed Alborzi-Iran) 10:30-11:00			
Panel members			
Advancements in Endometriosis and Adenomyosis: Insights from the Asian Society of Endometriosis and Adenomyosis (ASEA)	Prof. Saeed Alborzi	Prof. Moamar Al-Jefout (UAE-Jordan) Prof. Angela S. Aguilar (Philippines) Prof. Pietro Santulli (France) Prof. Hemantha Senanayake (Sri Lanka) Prof. Alexander Popov (Russia)	11:00-13:30
Conclusion and Closing Ceremony 13:30-14:00			



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Day 1-Second Hall Program 20 December, 2023

Panel name	Panel chair	Speakers	Time of lectures
Panel members			
Fertility Preservation in Patients with Endometriosis and Endometrial Cancer	Dr. Afsaneh Mohammadzadeh	Dr. Setareh Akhavan Dr. Soheila Ansari-pour Dr. Azam Sadat Mahdavi Dr. Saman Mohammadipour Dr. Shahrzad Zadeh Modarres	8:00-9:30
Opening Ceremony: 9:30-10:30			
Break 10:30-11:00			
Panel members			
Myomectomy and Laparoscopic Hysterectomy	Dr. Hossein Asefjah	Dr. Shahla Nouri Ardabili Dr. Azam Sadat Mahdavi Dr. Mansoureh Samimi	11:00-12:30
Lunch Break: 12:30-13:30			
Keynote Lecture: Fertility Preservation in Cervical Cancer in Modern Epoch (Prof. Hooman Soleymani Majd-UK) 13:30-14:00			
Panel members			
Basic Principles and Ergonomics in Laparoscopic Surgery	Dr. Roxana Kargar	Dr. Leili Hafizi Dr. Behnaz Nouri Dr. Mahboobeh Azadehrah	14:00-15:30
Panel members			
New Treatments and Medications in Endometriosis	Dr. Shahla Chaichian	Dr. Roxana Kargar Dr. Tahereh Pourdast Dr. Samaneh Rokhgireh Dr. Roya Derakhshan	15:30-16:30
Keynote Lecture: Critical Evaluation of Researches on Infertility and Endometriosis in Iran (Dr. Arash Mohazzab-Iran) 16:30-17:00			



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Day 2-Second Hall Program 21 December, 2023

Panel name	Panel chair	Speakers	Time of lectures
Keynote Lecture: Cancer Arising from Endometriosis and Its Clinical Implications (Prof. Farr Nezhat-USA) 08:00-08:30			
Panel members			
Management of Bowel Endometriosis and Gastrointestinal Symptoms in Laparoscopy	Dr. Saman Mohammadipour	Dr. Hossein Yousef Fam Dr. Sara Bahramzadeh Dr. Khadijeh Shadjoo	8:30-09:15
Panel members			
Management of Urinary Tract Endometriosis in Laparoscopy	Dr. Saeed Arasteh	Dr. Nima Narimani Dr. Mohammad Hadi Radfar Dr. Kobra Tahermanesh Dr. Naser Amirjannati Dr. Behrang Abadpour	9:15-10:00
Break 10:00-10:30			
Keynote Lecture: Investigation of Clinical Outcomes, Surgical Procedures, and Postoperative Follow-up of Endometriosis Patients (Dr. Atefeh Gorgin-Iran) 10:30-10:45			
Panel members			
Adolescent Endometriosis, Endometriosis in Menopause, and Recurrence of Endometriosis	Dr. Azam Sadat Mahdavi	Dr. Elham Akbari Dr. Marzieh Parizad Dr. Banafsheh Tajbakhsh Dr. Ziba Zahiri Dr. Soudabeh Kazemi Aski	10:45-12:00
Lunch Break: 13:00-13:30			
Panel members			
Endometriosis: Science and Common Sense	Dr. Amir Hassan Zarnani	Dr. Ali Akbar Delbandi Dr. Saeed Reza Ghaffari Dr. Zatollah Asemi	13:30-14:45
Panel members			
Legal and Ethical Aspects in Laparoscopic Surgeries	Dr. Alireza Milanifar	Dr. Mohammad Kazemian Dr. Reza Omani Samani Dr. Alireza Parsapour Dr. Hamidreza Namazi Dr. Kamran Aghakhani Dr. Elham Akbari	14:45-16:00
Keynote Lecture: Nerve Sparing in Deep Endometriosis Surgery (Prof. Jessica Papillon Smith-Canada) 16:00-16:30			
Panel members			
Hysteroscopy	Dr. Mehri Mashayekhy	Dr. Firouzeh Ghaffari Dr. Maryam Hafezi Dr. Parisa Mostafaei	16:30-17:30



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Day 3-Second Hall Program 22 December, 2023

Panel name	Panel chair	Speakers	Time of lectures
Panel members			
Psychiatric Problems and Quality of Life in Patients with Endometriosis	Dr. Behzad Ghorbani	Dr. Arman Taheri Dr. Shadab Shahali Dr. Fatemeh Mohammad Najjar	8:30-09:30
Keynote Lecture: The Role of Nutrition in Endometriosis (Ladan Giahi-Iran) 9:30-10:00			
Break 10:00-10:30			
Panel members			
Management of Pelvic Floor Dysfunction: Surgical Modalities	Dr. Zinat Ghanbari	Dr. Nasrin Ghangizi Dr. Soodabeh Darvish Dr. Maryam Deldar Prof. Khashayar Shakiba (USA)	10:30-11:45
Panel members			
Nursing and Midwifery Considerations in Endometriosis Laparoscopic Surgery	Safoura Soleimani Fakhr	Dr. Mitra Zandi Dr. Fatemeh Hajibabaei Dr. Fahimeh Ranjbar Razieh Saber Shahraki Nasim Kalantari Bahareh Abbasi Fariba Mohammadi	11:45-13:30



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Abstracts



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Laparoscopy in the Past, Present, and Future

Abolfazl Mehdizadeh Kashi

Iran University of Medical Sciences, Tehran, Iran

Abstract

The term *minimally invasive surgery* (MIS) was introduced by John Wickam to describe the emerging therapeutic approach designed to minimize the trauma inflicted on patients by surgical and allied interventional procedures.

The origins of endoscopy can be traced back to ancient times. The first recorded use of endoscopy can be attributed to Hippocrates, who practiced medicine at the Kos Medical School between 375-460 BC. Additionally, in the Babylonian Talmud around 500 BC, there is a reference to an instrument called Siphopherot, which may have been used for vaginoscopy. In the 10th century AD, Al-Zahrawi (936-1009 AD) introduced the use of mirrors for light reflection in endoscopy, while around the same time, Avicenna (980-1037 AD) also utilized mirrors in endoscopic procedures in Iran.

The modern endoscopic/laparoscopic era began in the early 19th century when Phillip Bozzini¹ described a cystoscope (1805). This early endoscope consisted of a complex system of reflecting mirrors, candles, and a urethral cannula. It successfully brought light into the internal cavities of the body and redirected it into the eye of the observer.

Over the years, there have been numerous instances of both successful and unsuccessful instrument developments. The success of any instrument is the result of numerous factors. It is important to acknowledge and appreciate the significant progress made in gynecologic endoscopic surgery from its early days, considering how far and how rapidly we have advanced.

Over the years there have been many instrument successes and failures. Much goes into the success of any one instrument. Sometimes we forget how far and how quickly we have come from the early days of gynecologic endoscopic surgery. There is no surgical specialty that has not been influenced by the new approach and laparoscopic surgery has become firmly integrated into routine surgical practice. While some may argue that it has reached a stage of maturity, there are still unresolved key issues pertaining to patient care.

Keywords: Cystoscope, Endoscopy, Laparoscopic surgery, Siphopherot, Surgical specialty, Vaginoscopy



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The Crucial Role of Teamwork During Multidisciplinary Treatment of Endometriosis

Safoora Soleimani Fakhr

Reproductive Biotechnology Research Center, Avicenna Research Institute, ACECR, Tehran, Iran

Abstract

Endometriosis is a complex and often debilitating condition affecting millions of women worldwide. Its diagnosis and management require a holistic approach that goes beyond the confines of a single medical specialty. This seminar explores the paramount importance of teamwork in the treatment of endometriosis, with a focus on nurses and midwives as integral members of the multidisciplinary team.

Endometriosis is not merely a gynecological issue; it affects multiple aspects of a patient's life, including physical, emotional, and psychological well-being. Thus, a collaborative approach that brings together healthcare professionals from various disciplines is indispensable. The seminar will delve into several key aspects of teamwork in endometriosis care:

1. **Early Detection and Diagnosis:** Teamwork facilitates the early identification of endometriosis symptoms, ensuring that patients receive prompt evaluation and diagnosis.
2. **Holistic Patient Care:** A multidisciplinary team can address the diverse needs of patients, including pain management, fertility concerns, mental health support, and lifestyle adjustments.
3. **Surgical Expertise:** When surgery is necessary, effective teamwork ensures that surgeons, anesthesiologists, and nurses collaborate seamlessly to provide optimal surgical outcomes and post-operative care.
4. **Patient Education and Empowerment:** Nurses and midwives play a crucial role in educating patients about their condition, treatment options, and self-management strategies, empowering patients to actively participate in their care.
5. **Research and Innovation:** Collaborative efforts among healthcare professionals drive research, innovation, and the development of new treatment modalities, ultimately improving the quality of care for endometriosis patients.
6. **Psychological Support:** Psychologists and counselors can address the mental health challenges often associated with endometriosis, helping patients cope with the emotional aspects of the disease.

This seminar aims to underscore the significance of teamwork in the comprehensive care of women with endometriosis. By fostering a culture of collaboration and communication among healthcare providers, we can enhance the quality of life for individuals affected by this condition.

Keywords: Endometriosis, Multidisciplinary treatment, Psychological support, Quality of life



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Cancer Arising from Endometriosis and Its Clinical Implications

Farr Nezhat

Weill Cornell Medical College, Cornell University, New York, US

Abstract

Endometriosis is a chronic, inflammatory, estrogen-dependent and typically progressive disease affecting approximately 10% of women. Endometriosis is often associated with pain, infertility, abnormal uterine bleeding and carries malignant potential with an increased ovarian cancer risk of 2-3% compared to 1.4% in the general population. Epidemiologic, histologic, and molecular studies suggest a link between endometriosis and invasive epithelial ovarian cancer, especially within specific histological subgroups. These subgroups include clear cell ovarian carcinomas (with a relative risk of 3.05), low-grade serous ovarian carcinomas (with a relative risk of 2.11), and endometrioid ovarian carcinomas (with a relative risk of 2.04). Genetic mutations such as BCL-2, p53, HNF-1B, and ARID1A appear to be common between ovarian cancers and contiguous endometriosis lesions. Pathogenesis is thought to be related to somatic gene mutations, inflammation or hormonal influences. Preventative methods include hormonal suppression, surgical treatment, bilateral salpingectomy or tubal ligation, oophorectomy, and hysterectomy. Further research is needed to understand the genomic and immunologic pathways between endometriosis and endometriosis-associated ovarian cancers.

Keywords: Cancer, Endometriosis, Gene mutations, Preventive methods



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Advancing Endometriosis Care Through Collaborative Efforts

Safoora Soleimani Fakhr

Reproductive Biotechnology Research Center, Avicenna Research Institute, ACECR, Tehran, Iran

Abstract

Endometriosis, a chronic and multifaceted gynecological condition, poses significant challenges for both patients and healthcare providers. This abstract encapsulates a comprehensive exploration of the evolving landscape of endometriosis care, emphasizing the pivotal role of collaboration among healthcare professionals, patients, researchers, and advocacy groups.

The cornerstone of effective endometriosis care is the formation of multidisciplinary teams comprising gynecologists, surgeons, nurses, pain specialists, psychologists, and others. Through seamless collaboration, these teams ensure a holistic approach to diagnosis, treatment, and patient support. Real-life examples demonstrate the transformative impact of such teamwork, resulting in improved outcomes and enhanced quality of life for individuals living with endometriosis.

Patient education and empowerment are central tenets of this collaborative effort. Educating patients about their condition, treatment options, and self-management strategies empowers them to actively participate in their care journey. Stories of patient advocacy underscore the profound influence of informed and engaged individuals, not only in managing their own health but also in raising awareness about endometriosis on a broader scale.

Fertility preservation and reproductive counseling provide hope for individuals concerned about the potential impact of endometriosis on their family planning. This abstract highlights the importance of providing individuals with comprehensive information and personalized guidance, allowing them to make informed decisions about their reproductive health.

Research and innovation play a pivotal role in shaping the future of endometriosis care. Collaboration among scientists, clinicians, and researchers leads to breakthroughs in understanding the condition's genetic and molecular underpinnings. Such advancements hold the promise of early diagnosis, more effective treatments, and personalized medicine tailored to each patient's unique profile.

Challenges in endometriosis care, including delayed diagnosis and limited treatment options, are addressed through collective efforts, paving the way for improved care and quality of life. As we look ahead, the collaborative spirit continues to drive progress, offering a brighter future for individuals living with endometriosis. In conclusion, this abstract encapsulates the essence of collaborative efforts in advancing endometriosis care. Through teamwork, patient education, research, and a commitment to overcoming challenges, the healthcare community strives to improve the lives of those affected by this complex and often underestimated condition.

Keywords: Collaborative effects, Endometriosis care, Healthcare professionals, Patient education, Reproductive counseling



Laparoscopic Excision of Deep Infiltrating Endometriosis: A Prospective Observational Study Assessing Perioperative Complications in 244 Patients

Shaheen Khazali ^{1, 2, 3}, Atefeh Gorgin ², Arash Mohazzab ², Roxana Kargar ², Roya Padmehr ², Khadijeh Shadjoo ², Vasilis Minas ¹

1. Centre for Endometriosis and Minimally Invasive Gynaecology (CEMIG), Ashford & St. Peter's Hospital NHS Foundation Trust, Chertsey, UK

2. Avicenna Centre for Endometriosis and Minimally Invasive Gynaecology (ACEMIG), Avicenna Research Institute, ACECR, Tehran, Iran

3. Royal Holloway-University of London, Egham, UK

Abstract

Background: The purpose of the current study was to examine perioperative complications in patients undergoing laparoscopic excision of deep infiltrating endometriosis (DIE).

Methods: This was a prospective study of a case series of women who underwent laparoscopic excision of deep infiltrating endometriosis from September 2013 through August 2016 in a tertiary referral center for endometriosis and minimally invasive gynaecological surgery in Iran. Data collected included demographics, baseline characteristics, intraoperative and postoperative data up to 1 month following surgery.

Results: Data was collected from a cohort of 244 consecutive patients who underwent radical laparoscopic excision of all visible deep infiltrating endometriosis (DIE). Major postoperative complications occurred in 3 (1.2%) and minor complications in 27 (11.1%) cases. Moreover, 80.3% of our patient group had stage IV endometriosis. Segmental bowel resection was performed in 34 (13.9%), disc resection in 7 (2.9%), and rectal shaving in 53 (21.7%) cases. In 29.6% of cases, successful completion of the procedure required a collaborative surgical approach involving a gynecologist and a colorectal and/or urological colleague. The mean operating time was 223.8 minutes (\pm 80.7 standard deviation, range 60–440 min) and the mean hospital stay was 2.9 days (\pm 1.5 standard deviation, range 1–11). The rate of conversion to laparotomy was found to be 1.6% in this study.

Conclusion: Within the context of a tertiary referral center that employs a multidisciplinary approach, the utilization of various laparoscopic surgical techniques for complete excision of all visible deep infiltrating endometriosis (DIE) yields safe outcomes with minimal complication rates.

Keywords: Deeply infiltrating endometriosis, Laparoscopic treatment of endometriosis, Multi-disciplinary team, Recto-vaginal endometriosis, Surgical complications



The 2nd International and The 5th National Congress on Endometriosis and Minimally Invasive Gynecology



The Past, Present, and Future of Medicine and Surgery: A Road Map to Its Standardization and Democratization

Camran Nezhat

School of Medicine, University of California San Francisco, CA, US

Abstract

In this dynamic presentation, the historical evolution and future prospects of surgery are explored, with a focus on standardization, democratization, and the realm of minimally invasive techniques. Delving into the synergy of artificial intelligence, data analytics, and robotics, attendees will uncover the transformative potential of $E=mc^2$ in reshaping healthcare. The discussion navigates the past achievements, current innovations, and the path forward for minimally invasive surgery, highlighting its pivotal role in accessible, patient-centric healthcare. This concise yet comprehensive session offers profound insights into the intersection of technology, ethics, and patient empowerment, paving the way for a future where advanced surgical procedures are standardized, accessible, and personalized for all.

Keywords: Democratization, Minimally invasive gynecology, Standardization, Surgery



Fertility Preservation in Endometriosis Patients

Mahnaz Heidari

Department of Andrology and Embryology, Reproductive Biotechnology Research Center, Avicenna Research Institute, Academic Center for Education, Culture and Research (ACECR), Tehran, Iran

Abstract

Endometriosis is an estrogen dependent, chronic inflammatory disease characterized by the growth of endometrial tissue outside the uterus which can seriously compromise ovarian function. Almost 50% of patients will experience infertility. The pathophysiology of endometriosis and the iatrogenic damage caused by surgical interventions are influenced by several mechanisms, contributing to infertility in patients. Endometriosis can have various impacts on fertility, such as the abnormal growth of endometrial tissue. Additionally, the chronic inflammation associated with endometriosis can adversely affect egg quality and the potential for successful embryo implantation. One of the significant challenges is the potential impact on fertility of patients. Advancements in medical technology have provided options for fertility preservation in women with endometriosis. Fertility preservation methods for patients with endometriosis include various approaches. These involve selecting the most suitable surgical methods, avoiding unnecessary surgery, assessing ovarian reserve prior to surgery, implementing emergency assisted reproductive technologies (ARTs), utilizing gonadotropin-releasing hormone agonists before laparoscopic surgery, practicing a healthy lifestyle, and considering cryopreservation of eggs, embryos, and ovarian tissue. The specific methods employed may vary based on individual factors such as the severity of endometriosis, age, overall reproductive health, and careful selection of surgical candidates to minimize the need for repeat procedures. Each patient with endometriosis should be evaluated individually using these methods to maximize fertility preservation. Counseling should be provided to all patients with endometriosis considering factors such as age, extent of ovarian involvement, current ovarian reserve, history of past and upcoming surgeries for endometriosis, as well as the current success rates and potential risks associated with the available treatment options. In conclusion, fertility preservation is a crucial consideration for women with endometriosis who desire to have children in the future. Surgical interventions and assisted reproductive technologies are suitable options to increase the chances of a successful pregnancy. Fortunately, thanks to medical advancements, women with endometriosis now have the opportunity to preserve their fertility and fulfill their aspirations of starting a family.

Keywords: Assisted reproductive technologies, Endometriosis, Fertility preservation



Empowering Patients with Endometriosis: The Vital Role of Nurses and Midwives in Patient Education

Safoora Soleimani Fakhr

Reproductive Biotechnology Research Center, Avicenna Research Institute, ACECR, Tehran, Iran

Abstract

Endometriosis is a chronic condition that not only affects the physical health of individuals but also impacts their emotional well-being, relationships, and daily lives. Effective patient education is a cornerstone of comprehensive care, and nurses and midwives are at the forefront of this essential aspect of treatment. This study focuses on the pivotal role played by nursing and midwifery professionals in educating and empowering patients with endometriosis.

Key components of patient education for endometriosis include:

- **Understanding the Condition:** Patients often encounter confusion and misinformation about endometriosis. Nurses and midwives are instrumental in providing clear, concise explanations of the condition, its causes, and its impact on the body.
- **Treatment Options:** Educating patients about the range of treatment options available, including medical management, surgery, and lifestyle modifications enables them to make informed decisions about their care.
- **Pain Management:** Endometriosis is characterized by debilitating pain. Healthcare providers can guide patients in understanding and managing their pain, whether through medication, physical therapy, or alternative therapies.
- **Fertility Considerations:** For those with fertility concerns, nurses and midwives can provide information about fertility preservation options and support patients in making choices aligned with their reproductive goals.
- **Self-Management Strategies:** Empowering patients to actively participate in their care is paramount. Nurses and midwives can teach self-management techniques to patients such as tracking symptoms, maintaining a pain diary, and educating the patients on recognizing the signs and symptoms that indicate when it is necessary to seek medical attention.
- **Mental Health Support:** The emotional toll of endometriosis can be profound. Healthcare providers can educate patients about the importance of seeking mental health support and coping strategies to manage the psychological aspects of the condition.
- **Advocacy and Support:** Nurses and midwives can encourage patients to advocate for their needs within the healthcare system, ensuring that they receive the appropriate care and support.

Empowered patients are better equipped to navigate the challenges posed by endometriosis and actively participate in their treatment plans. The current study will explore various educational strategies and tools that healthcare professionals can employ to enhance patient understanding and engagement.

Keywords: Emotional well-being, Endometriosis, Fertility considerations, Patient education



Comparison of Fertility and Neonatal Outcomes Following Frozen and Fresh Embryo Transfer in Women with Endometrioma-Related Infertility

Parisa Pirooznia, Mehri Mashayekhy, Firouzeh Ghaffari, Zahra Zolfaghari, Firouzeh Ahmadi, Fatemeh Hasani

Department of Endocrinology and Female Infertility, Reproductive Biomedicine Research Center, Royan Institute for Reproductive Biomedicine, ACECR, Tehran, Iran

Abstract

Background: Endometrioma, a prevalent manifestation of endometriosis, is often indicative of the disease's severity. In vitro fertilization and embryo transfer (IVF/ET) serve as significant therapeutic strategies for infertility associated with endometriosis. However, the optimal type of embryo transfer (frozen or fresh) and its impact on the success rate of pregnancy remain subjects of ongoing debate, with limited studies conducted in this domain. The aim of this study was to conduct a comparative analysis of fertility and neonatal outcomes between fresh embryo transfer and frozen embryo transfer in women afflicted with endometrioma-related infertility.

Methods: In this retrospective study, the data recorded in Royan Institute database was utilized. The focus was on women diagnosed with endometrioma-related infertility who underwent embryo transfer cycles in the period from March 2016 to March 2021. The study included a total of 200 women who had been diagnosed with endometrioma. Of these, 79 were in the fresh embryo transfer group and 121 were in the frozen embryo transfer group.

Results: There were no significant differences between the two study groups in terms of demographic characteristics and endometrioma characteristics. When evaluating fertility outcomes, the only significant difference observed was in the live birth rate, which was 36.4% for the frozen embryo transfer group compared to 22.8% for the fresh embryo transfer group (p -value=0.04). In terms of neonatal outcomes, there was no significant difference between the two groups.

Conclusion: Our study shows that using frozen embryos in the transfer process might lead to better embryo qualities and higher chances of pregnancy in women who have been diagnosed with endometrioma. This finding could potentially influence clinical practices and decision-making processes in the treatment of endometrioma-related infertility.

Keywords: Endometrioma, Fertility outcomes, Fresh embryo transfer, Frozen embryo transfer, Neonatal outcomes



Complications of Laparoscopic Surgery in Endometriosis Treatment

Togas Tulandi

Department of Obstetrics and Gynecology, Milton Leong Chair in Reproductive Medicine, McGill University, Canada

Abstract

In general, the rate of laparoscopic complications is low. However, severe complications such as vascular or bowel injury can be encountered and over half of the injuries occur during laparoscopic entry. Risk factors include previous abdominal surgery, complexity of the procedure, patient morbidities, and surgeon expertise. Complications of endometriosis surgery could be divided into three categories: complications of laparoscopy in general, complications related to ovarian reserve and infertility especially excision of ovarian endometrioma, and complications of excision of DIE (Deep Infiltrating Endometriosis). Surgical treatment of endometriosis is associated with a higher rate of complications. Treatment of ureteral endometriosis could be associated with ureteral stenosis, ureterovaginal fistula, or transection of the ureter. Rectovaginal fistula can occur after surgical treatment of rectovaginal nodule (up to 10% of cases). Complications of bowel endometriosis include fistula, leakage, or abscess formation. When it comes to prevention, it is vital for surgeons to possess a comprehensive understanding of the anatomy of abdominal and pelvic organs, as well as proficiency in handling specialized instruments, particularly thermal energy devices. The training and expertise of the surgeon significantly contribute to ensuring successful outcomes and minimizing potential complications.

Keywords: Endometriosis, Complications, Laparoscopic surgery, Surgeon expertise



Complications in Gynecologic Laparoscopic Surgeries

Roya Padmehr

Avicenna Fertility Center, Avicenna Research Institute, ACECR, Tehran, Iran

Abstract

Over the past two decades, laparoscopic surgery has undergone remarkable advancements and is now universally regarded as the primary approach for addressing a wide range of gynecological issues. It has gained widespread acceptance as the preferred method of choice for managing the majority of gynecological problems. A meta-analysis of 27 randomized controlled trials comparing laparoscopy and laparotomy for benign gynecological procedures concluded that the risk of minor complications after gynecological surgery is 40% lower with laparoscopy than with laparotomy, although the risk of major complications was similar. Access into the abdomen is the one challenge of laparoscopy that is particular to the insertion of surgical instruments through small incisions. One specific challenge of laparoscopy is gaining access to the abdomen, which involves the insertion of surgical instruments through small incisions. This complication rate has remained the same during the past 25 years. The initial stage of any laparoscopic surgery involves abdominal access and the creation of a pneumoperitoneum, which pose a significant risk of bowel and vascular injuries. These complications are specific to laparoscopic surgery and are rarely observed in open surgery. Failure to promptly recognize and address these injuries can lead to increased morbidity and mortality for both surgeons and patients. Delaying the recognition of these injuries until the postoperative period, rather than during the surgery itself, can exacerbate the severity of the consequences and increase both the medical and legal liability involved. In Finland, a total of 70,607 laparoscopic procedures were analyzed, and the national patient insurance association reported 256 complications. The incidence of major complications was found to be 1.4 per 1,000 procedures. This included 0.6 per 1,000 intestinal injuries, 0.3 per 1,000 urological injuries, and 0.1 per 1,000 vascular injuries. In a multicentric prospective study conducted in the Netherlands involving 72 hospitals, it was revealed that the overall incidence of intestinal injuries and major complications was 5.7 per 1,000 procedures. Notably, 70% of these incidents were associated with the primary port entry. The study also found that the overall incidence of laparoscopic entry injuries was 3.3 per 1,000 procedures. Among these cases, there were 29 instances of gastrointestinal damage (1.3 per 1,000) and 27 cases of abdominal vessel injuries (1.05 per 1,000). To reduce the occurrence of entry-related injuries, numerous techniques, instruments, and approaches have been introduced over the past century. These encompass the Veress pneumoperitoneum trocar, classic or closed entry methods, the open (Hasson) technique, direct trocar insertion without prior pneumoperitoneum, the use of shielded disposable trocars, optical Veress needles, optical trocars, radially expanding trocars, and a trocarless, reusable, visual access cannula. The preference for each of these entry methods varies based on the surgeon's training, experience, and personal biases, as well as regional and interdisciplinary variability.

Keywords: Entry methods, Laparoscopic surgery, Pneumoperitoneum, Open surgery, Vascular injuries



Evaluation of the Precision of Transvaginal Ultrasound (TVS) in Mapping Pelvic Deep Infiltrating Endometriosis (DIE)

Roya Padmehr

Avicenna Fertility Center, Avicenna Research Institute, ACECR, Tehran, Iran

Abstract

Endometriosis is a prevalent condition that is estimated to affect a wide range of reproductive-age women, ranging from 5% to 45%. It culminated in substantial morbidity and represents a significant public health issue. Deep infiltrating endometriosis (DIE) is characterized by the penetration of endometriotic lesions to a depth of at least 5 mm. It affects a considerable proportion of individuals with pelvic endometriosis, with prevalence rates ranging from 4% to 37%. Patients with DIE often experience symptoms such as pelvic pain, dysmenorrhea, dyspareunia, dyschezia, urinary symptoms, and infertility.

Symptoms caused by DIE are not specific, often resulting in misdiagnosis or delayed diagnosis. A pelvic examination can provide some clues to the presence of deep infiltrating endometriosis (DIE) through the identification of tender nodules and fibrosis in the cul-de-sac. However, it is not highly accurate in determining the full extent of the disease. The current gold standard for obtaining a definitive diagnosis of endometriosis continues to be surgical evaluation with histologic confirmation. However, it is important to note that laparoscopy may have limitations in detecting deep retroperitoneal locations of endometriosis, potentially resulting in missed diagnoses in such cases. There is a need for a reliable nonsurgical method to diagnose this highly prevalent disease and to determine the extent and location of DIE preoperatively to better plan the surgical approach. The level of surgery is strictly related to extent and location of the disease. In certain cases, the treatment requires a multi-specialty surgical team, able to provide the most radical approach and also to avoid the possible medicolegal implications. To detect DIE extension into the pelvis, use of magnetic resonance imaging (MRI) and transvaginal sonography (TVS) have been described. MRI imaging is highly effective in providing accurate information about lesions situated on the upper level of the sigmoid. However, when it comes to pelvic disease, transvaginal ultrasound (TVS) is considered an equally accurate diagnostic tool and is often preferred as the initial and widely utilized method for diagnosis. Maintaining open communication between the radiologist or sonographer and the clinician is crucial in delivering precise and comprehensive information to the patient regarding the extent of their disease. This collaboration helps in devising an optimal management plan, which may involve medical, surgical, or a combination of both approaches, tailored to the patient's specific needs. The objective of this study was to evaluate the precision of transvaginal ultrasound (TVS) in mapping pelvic deep infiltrating endometriosis (DIE) by comparing the TVS findings with laparoscopic and histologic results. The main purpose was to develop a standardized ultrasound mapping system that effectively documents the location, size, and depth of these lesions as visualized through preoperative TVS and subsequently confirmed by laparoscopy and histology.

Keywords: Deep infiltrating endometriosis, Fibrosis, Laparoscopy, Magnetic resonance imaging, Pelvic examination, Transvaginal sonography



The Effect of Laparoscopic Surgery of Endometriosis on Women's Pain, Serum Levels of Anti-Müllerian Hormone, and Cancer Antigen 125 (CA-125): A Two-year Study in Farmaniyeh Hospital in Tehran

Fereshteh Sarbazi ¹, Elham Akbari ¹, Anita Karimi ¹, Behnaz Nouri ², Shahla Noori Ardebili ¹

1. Department of Obstetrics and Gynecology, Farmanieh Hospital, Tehran, Iran

2. Department of Obstetrics and Gynecology, Shahid Beheshti University of Medical Sciences, Shohadaye Tajrish Hospital, Tehran, Iran

Abstract

Background: Endometriosis is an important cause of chronic pain and infertility and surgery is considered the gold standard method for diagnosis and treatment. In this study, an attempt was made to evaluate the effect of laparoscopic surgery in women for treatment of endometriosis on pain, anti-Müllerian hormone (AMH), and cancer antigen 125 (CA-125).

Methods: In this prospective cross-sectional study, 174 women who referred to Farmaniyeh hospital from August 2015 to December 2017 and were surgically diagnosed with endometriosis stages III and IV were enrolled by census method. After approval by the Ethics Committee and obtaining written informed consent from the patients, their demographic, gynecological, and clinical characteristics were recorded and they were asked to record their pain severity before and three months after surgery on a numeric rating scale (NRS). Blood samples were taken from the patients before and three months after surgery for measurement of serum levels of AMH and CA-125. Data were analyzed using SPSS v 21 and before-after analysis was performed using paired *t* test.

Results: Mean age of women was 34.86 ± 6.47 years; in general, 60.9% were married and 49.4% were housekeepers. Indication of surgery was pain in the majority (68.4%) and pain and infertility in the rest. Types of endometriotic lesions included: endometrioma (19%), deep infiltrating endometriosis (DIE) (3.4%), and both (endometrioma and DIE) (77.6%). Women's pain reduced from 6.79 ± 2.19 before surgery to 1.48 ± 1.68 after surgery; serum level of AMH reduced from 2.80 ± 1.86 ng/mL to 1.76 ± 1.40 ng/mL and CA-125 from 220.25 ± 257.06 U/mL to 23.27 ± 23.25 U/mL (all $P < 0.001$). Of 21.2% of cases with recurrence of the problem, 13.5% underwent reoperation. The total reoperation rate was 2.8%. Among the 55 patients with infertility, 78.1% achieved pregnancy following the surgery, with 54.5% of those pregnancies occurring spontaneously.

Conclusion: Surgical treatment of endometriosis reduced the patients' pain and inflammation and resolved the patients' infertility with minimal rate of reoperation.

Keywords: Anti-Müllerian hormone, Endometriosis, Pain, Outcome assessment



The Impact of Adolescent Endometriosis on Quality of Life

Marzieh Parizad

Tabriz University of Medical Sciences, Tabriz, Iran

Abstract

The majority of young women will experience discomfort associated with menstrual cycles and miss out on education and social opportunities. Endometriosis, the presence of endometrial glands and stroma outside the uterus, is the most common cause of secondary dysmenorrhea and characterized by pain despite treatment with nonsteroidal anti-inflammatory drugs and hormonal agents. The exact prevalence of endometriosis in adolescents remains uncertain. Delay in diagnosis leads to persistent pain, affects quality of life, and potentially contributes to disease progression and subfertility. A laparoscopic diagnosis is the gold standard, but the surgical appearance may differ from adults, as endometriotic lesions are usually red or clear, making their identification a challenge for gynecologists who are unexperienced with endometriosis in adolescents. A personalized medical-surgical treatment is regarded as the most effective therapeutic strategy to achieve remission of symptoms, suppress disease progression, and protect future fertility. Studies have demonstrated how adolescent endometriosis negatively affects patients' quality of life and psychosocial functioning. Development of therapeutic interventions targeting psychosocial function and quality of life is imperative for adolescent patients.

Keywords: Dysmenorrhea, Endometriosis, Laparoscopic diagnosis, Menstrual cycles, Personalized treatment



Nursing Interventions Before and After Endometriosis Laparoscopic Surgery

Bahareh Abbasi

Avicenna Fertility Center, Avicenna Research Institute, ACECR, Tehran, Iran

Abstract

Patient education before surgery

The optimal time for providing instructions is when the patient is prepared and capable of comprehending and implementing them. These instructions may include techniques such as deep breathing and coughing. Prior to surgery, it is essential for nursing care to educate the patient on the appropriate methods. Post-surgery, the patients should adjust their breathing pattern by taking deep breaths and exhaling slowly, while also holding their breath (maximum breath). To strengthen their breathing, the patients should take short breaths and cough from the depth of their lungs. In cases where the surgery involves the chest or abdomen, the nurse demonstrates how to immobilize the surgical incision line before the procedure, aiming to minimize pressure and control pain.

Pre-operative assessment

When a patient arrives at the inpatient department and prior to being referred to the operating room, it is crucial to address the following considerations: 1) reducing anxiety, 2) assessing nutritional status, 3) evaluating obesity, 4) identifying any history of drug, alcohol, or substance addiction, 5) assessing respiratory status, 6) evaluating diabetes management, 7) assessing immune system, function, 8) evaluating liver and kidney function, 9) ensuring bowel preparation, 10) assessing the need for blood transfusion, 11) preparing the skin before surgery, 12) inserting a bladder catheter if necessary, 13) establishing vein access and monitoring hemodynamics, and 14) ensuring the patient continues taking prescribed medications.

These points are crucial to optimize patient care and ensure a safe surgical procedure.

Post-operative care

View patient education: Post-operative care is initiated at the end of the operation and continues in the recovery room and throughout the hospitalization and outpatient period. Critical immediate concerns are airway protection, pain control, assessment of mental status, and wound healing. Other important concerns are preventing urinary retention, constipation, deep venous thrombosis (DVT), and reducing blood pressure variability (high or low). For patients with diabetes, blood glucose levels are monitored closely by fingerstick testing every 1 to 4 hours until patients are awake and start eating since better glycemic control improves the outcomes of operation.

Keywords: Endometriosis, Laparoscopic surgery, Patient education, Post-operative care, Pre-operative assessment



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Ergonomics in Laparoscopic Surgery

Roxana Kargar

Avicenna Fertility Center, Avicenna Research Institute, ACECR, Tehran, Iran

Abstract

Laparoscopic surgery offers patients a less painful surgical experience but is more demanding for the surgeon. The growing technological complexity and sometimes ill-fitted equipment have led to increased complaints regarding surgeon fatigue and discomfort during laparoscopic surgery. To enhance efficiency, safety, and comfort for the operating team, it is crucial to prioritize ergonomic integration and create a suitable laparoscopic operating room environment. Having a solid understanding of ergonomics can significantly improve the comfort of surgeons in the operating room while also minimizing physical strains on them.

Keywords: Ergonomics, Laparoscopic surgery, Operating room, Surgical experience



Sexual Functioning Among Endometriosis Patients: A Systematic Review Study

Atefeh Salimi-Akinabadi ¹, Sara Beigzadeh ², Sogand Sarmadi ², Aram Halimi ³, Amir Mohamad Nazari ², Akbar Zare-Kaseb ², Hossein Bakhtiari-Dovvombaygi ², Ali Yasemi ², Mitra Zandi ²

1. *Clinical Research Development Center, Shahid Modarres Educational Hospital, Shahid Beheshti University of Medical Sciences, Tehran, Iran*

2. *School of Nursing and Midwifery, Shahid Beheshti University of Medical Sciences, Tehran, Iran*

3. *School of Public Health and Safety, Shahid Beheshti University of Medical Sciences, Tehran, Iran*

Abstract

Background: Endometriosis is a chronic gynecological disorder affecting millions of women worldwide. While the physical and emotional burden of endometriosis has been extensively studied and documented, there remains a notable gap in understanding the intricate relationship between endometriosis and sexual functioning and very little is known about the relationship between endometriosis related symptoms and sexual dysfunction. To address this crucial gap in knowledge, a systematic review study was performed to comprehensively assess the sexual functioning of women diagnosed with endometriosis.

Methods: Relevant studies were identified by searches of the PubMed, Scopus and Web of Science databases from 2010-2023 using Endometriosis, Sexual Dysfunction, Sexual Satisfaction, Sexual Desire, Dyspareunia, and Sexual Quality of Life as mesh terms. Only articles written in English were included, while review articles were excluded.

Results: Based on a literature search, prevalence of sexual dysfunction in women with endometriosis was high. Endometriosis symptoms affect the sexual functioning and marital satisfaction of couples in a complex manner due to the clinical presentation of the disease.

Conclusion: The results highlight the considerable impacts of endometriosis symptoms on women's sex lives. Sexual dysfunction associated with endometriosis should also be taken into consideration while managing these patients and an integrated and patient-centered approach to medical, psychological, and sexual issues is suggested. Efficient medical and nursing counseling may be necessary to ameliorate the negative impact of endometriosis on women's sexual well-being. The findings from this study will have implications for healthcare providers, policymakers, and researchers, with the ultimate goal of improving the quality of care for women affected by endometriosis.

Keywords: Dyspareunia, Endometriosis, Sexual desire, Sexual functioning, Sexual quality of life,



The Significance of Establishing Hospital Ethics Committees in Infertility Treatment Centers

Fatemeh Hajibabae

School of Nursing and Midwifery, Tehran University of Medical Sciences, Tehran, Iran

Abstract

In today's complex world, the health service providers and organizations should pay attention to the issue of bioethics, because the treatment policies and policy making to protect the rights of patients are always changing. Moreover, healthcare systems have undergone significant transformations over time. In modern clinical medicine, there is a heightened recognition of the paramount importance of making informed decisions regarding emerging issues. There is also a strong emphasis on prioritizing the interests and preferences of patients, enhancing their satisfaction, and upholding ethical considerations. Due to the complexity of modern medical and ethical issues in the current era and the difficulty in resolving these issues by service providers alone, the use of ethical counseling in providing health services has received significant attention. Addressing ethical challenges, engaging in meaningful interactions with patients and their families to address their numerous questions, making informed decisions and care plans, and effectively managing the emotional issues experienced by patients and families, such as despair or fear, are frequent situations where therapists rely on ethical counseling. Nonetheless, it is important to acknowledge that clinics and fertility treatment centers encounter a range of ethical challenges in different practices, including the use of assisted reproductive technologies (ARTs), surrogacy, gamete donation, embryo donation and artificial insemination, as well as the management of couples affected by drug addiction or individuals with viral infections, such as HIV. Various studies indicate that physicians and nurses consult with their colleagues when encountering ethical challenges. Nevertheless, in countries across the world, ethical consultations have emerged as a vital component of healthcare delivery. Hospital ethics committees play a crucial role in providing guidance and support in navigating complex ethical dilemmas that arise in the delivery of healthcare services. Typically, these committees are tasked with providing solutions to ethical challenges and offering recommendations that align with accepted ethical standards. The proliferation of ethical problems and issues has made ethical decision-making increasingly complex for clinical staff. In such circumstances, ethics committees play a crucial role in assisting healthcare providers by conducting comprehensive examinations of ethical issues. The hospital ethics committee is composed of a group of individuals in a hospital or health care center who consider, discuss, and review ethical issues related to patient care and provide a comprehensive report to help make decisions and take action in the given field. The foundation of the mission, vision, and values of medical centers is rooted in the integration of ethical principles into the provision of quality care. In this regard, the significance of hospital ethics committees in achieving this objective cannot be overstated. One of the outcomes of forming ethics committees in infertility treatment centers is preserving the rights of patients, strengthening collaborative decision-making (with the participation of patients and therapists), establishing fair processes and policies to enhance patient-centered outcomes, and promoting the ethical knowledge of the employees working in these centers. Infertility treatment centers are strongly advised to educate their staff, including doctors, nurses, and midwives, about the significance and purpose of establishing a hospital ethics committee. By doing so, these centers can ensure that their employees are aware of the committee's role and the benefits it offers. This knowledge empowers staff members to actively engage with the committee's decisions, ultimately contributing to the enhancement of the quality of health services provided. Moreover, the involvement of an ethics committee helps protect the rights of patients, fosters a patient-centered approach, and ultimately increases patient satisfaction.

Keywords: Assisted reproductive technologies, Hospital ethics committee, Nursing



Laparoscopic Endometriosis Surgery

Roxana Kargar

Avicenna Fertility Center, Avicenna Research Institute, ACECR, Tehran, Iran

Abstract

This film showcases a laparoscopic endometriosis surgery performed on a 42-year-old G1P1 woman who presented with severe dysmenorrhea, pelvic pain, and menorrhagia. In her ultrasound examination, it was revealed that she had an uterine adenomyosis with a 21mm submucosal myoma. Additionally, a 5736 mm right endometrioma and a 3824 mm left hematosalpinx were also identified. Both uterosacral ligaments (USL) exhibit thickening, and a 16 mm deep infiltrating endometriosis (DIE) nodule was present on the rectosigmoid muscularis layer. During the surgery, a hysterectomy, bilateral oophorectomy, and resection of deep infiltrating endometriosis (DIE) were performed on both the uterosacral and retrocervical lesions, including a bladder nodule. Additionally, a segmental bowel resection was conducted using a stapler, and an appendectomy was performed. After the surgery, a Foley catheter was inserted and left in place for 10 days. However, upon its removal, the patient reported urinary leakage from the vagina. To investigate the possibility of a fistula, a CT scan was requested for diagnosis. Subsequently, a Foley catheter and a right double-J (DJ) stent were inserted and remained in place for a month. After the removal of the Foley catheter and DJ stent, the fistula was repaired successfully.

Keywords: Deep infiltrating endometriosis, Foley catheter, Laparoscopic surgery, Uterosacral ligaments



Bowel Endometriosis and Its Treatment

Saman Mohammadipour

Islamic Azad University of Medical Sciences, Tehran, Iran

Abstract

Bowel endometriosis is a medical condition in which the tissue similar to the lining of the uterus (endometrial tissue) grows on or inside the bowel. This can lead to a range of symptoms, including abdominal pain, bloating, diarrhea, constipation, and sometimes rectal bleeding during menstruation. It's a subtype of endometriosis, a condition where the tissue similar to the uterine lining grows outside the uterus. Diagnosis and treatment often involve a combination of medical management and surgery, depending on the severity of the condition. If a patient has concerns or symptoms related to bowel endometriosis, it's important to consult with a healthcare provider for proper evaluation and guidance. Surgery is a common approach for treating bowel endometriosis when conservative treatments like medication or hormone therapy don't provide sufficient relief or if there are complications. Here are some key points about bowel endometriosis surgery:

1. **Laparoscopic Surgery:** Most often, surgeons use laparoscopic or minimally invasive techniques to remove endometrial tissue from the bowel. This involves making small incisions and using a camera and specialized instruments to perform the surgery.
 2. **Resection:** The surgical procedure may involve resecting (removing) the affected part of the bowel that has endometrial implants. In some cases, a segment of the bowel may need to be removed and then reconnected (anastomosis).
 3. **Expert Surgeons:** Given the complexity of bowel endometriosis surgery, it's important to seek out a surgeon who has experience and expertise in treating this condition.
 4. **Potential Risks:** As with any surgery, there are risks involved, including infection, bleeding, and injury to nearby organs. Patients should discuss these risks with their healthcare provider.
 5. **Recovery:** Recovery time can vary depending on the extent of the surgery, but most patients can expect a few weeks of recovery. It's important to follow post-operative instructions carefully.
 6. **Fertility Considerations:** If fertility is a concern, the potential impact of surgery on fertility must be discussed with the patients. Some procedures may affect fertility, so it's important to have a clear understanding of the options and implications.
 7. **Multidisciplinary Approach:** Bowel endometriosis often requires a multidisciplinary approach involving gynecologists and colorectal surgeons to ensure comprehensive care.
- Before undergoing surgery for bowel endometriosis, it's crucial to have a thorough discussion with the healthcare provider about the benefits, risks, and expected outcomes. They can provide guidance on the most suitable treatment approach based on the specific situations of patients.

Keywords: Bowel endometriosis, Laparoscopic surgery, Multidisciplinary approach, Potential risks



Water-Jet Dissection for Ureterolysis

Kobra Tahermanesh

Iran University of Medical Sciences, Tehran, Iran

Abstract

The application of water streams for surgical dissection of human tissues has been employed in various medical and surgical specialties. In recent times, water jet instruments have been used in neurosurgery, gastrointestinal procedures, urology, and cardiovascular surgeries. Hydro surgery has witnessed significant advancements in recent years, with the development of hydro-jet generators and delivery probes that offer a wider range of pressure control. The water jet instrument functions as a surgical device by harnessing the kinetic energy derived from the water flowing through a nozzle located at the tip of the delivery device. This energy is transferred to the tissue surface, resulting in the expulsion of tissue particles and enabling precise incisions to be made in organs or tissues.

Water jet technology offers several advantages over conventional instruments in terms of tissue dissection. One key advantage is the capability for selective tissue removal while preserving vessels based on the varying tensile strengths of different tissues. Water jet devices, with their continuous water flow, enable precise organ dissection while preserving vessels measuring over 100-200 μm in diameter. Additionally, water jet instruments help avoid thermal damage to the surrounding parenchyma, which is typically unavoidable when using electric scalpels, electromagnetic, ultrasonic, or laser instruments. Recently, laparoscopic ureterolysis was performed on a 47-year-old patient with retroperitoneal fibrosis, following the failure of medical therapy involving steroids. The utilization of the ERBEJET 2 device has proven to streamline the procedure. By minimizing trauma to the ureter and preserving its blood supply, the ERBEJET 2 device has enhanced the overall efficacy of the surgical intervention. There are certain technical challenges associated with hydro surgery, particularly regarding the requirement for continuous aspiration of flushed normal saline. This is necessary to prevent the water stream from filling the abdomen during hydrodissection. Although this process does not significantly impact the surgical outcomes, it can be time-consuming. Another limitation of the device lies in the standardization of pressure parameters, which necessitates further trials and experimentation to establish more precise guidelines.

Keywords: Laparoscopy, Surgical intervention, Thermal damage, Ureterolysis, Water-Jet Dissection



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The Role of Dietary Factors in Development and Severity of Endometriosis

Zatollah Asemi

Research Center for Biochemistry and Nutrition in Metabolic Diseases, Institute for Basic Sciences, Kashan University of Medical Sciences, Kashan, Iran

Abstract

Ten percent of women who are of reproductive age suffer from endometriosis, a chronic condition that causes discomfort and eventually results in infertility. It has a complicated and diverse pathophysiology. The course of treatment involves the administration of pharmaceutical medications in addition to surgically removing endometriotic lesions. Regrettably, there is still a significant risk of recurrence following surgery even with a wide spectrum of current therapies. Therefore, it is crucial to improve the outcomes for individuals with endometriosis. In this context, there is a growing interest in exploring dietary modifications as a potential complement or support to traditional treatment approaches, including as a potential alternative to hormone therapy. Furthermore, an increasing amount of research shows that dietary habits have a good impact on the onset and severity of endometriosis. This paper focuses on the possible advantages of vitamins, minerals, and polyphenols (resveratrol, curcumin, quercetin, and epigallocatechin gallate) for endometriosis. The results demonstrate the potential of the selected substances to combat the condition. However, a smaller proportion of research has focused on investigating the actual effects of their use in women, with the majority of studies conducted on experimental animal models. Thus, carefully planned research is required to evaluate the significance of a carefully selected diet and the impact of certain dietary components on the health of endometriosis-affected women.

Keywords: Endometriosis, Micronutrients, Polyphenol, Vitamins



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The Association Between Psychopathological Features and Presence of Endometriosis

Behzad Ghorbani

Nanbiotechnolog Research Center, Avicenna Research Institute, ACECR, Tehran, Iran

Abstract

In several studies, no specific association was found between particular psychopathological features and the presence of endometriosis. However, subgroups of patients experiencing chronic pelvic pain, dysmenorrhea, and dyspareunia exhibited a distinct levels of psychopathology, which could potentially influence their perception of pain and reactions to it.

However, the studies did not determine a specific causality relation between some psychological features and endometriosis onset or pain perception or they did not exactly identify specific risk factors.

Yet, studies have identified certain noteworthy characteristics. These findings indicate that women with endometriosis are more likely to exhibit mood and anxiety disorders, higher levels of alexithymia, and dysfunction in the dimensions of obsessive-compulsive behavior and depression compared to the general population.

Keywords: Anxiety disorders, Endometriosis, Obsessive-compulsive disorder, Pain perception, Psychopathological features



Nonsurgical Endometriosis Treatments

Roxana Kargar

Avicenna Fertility Center, Avicenna Research Institute, ACECR, Tehran, Iran

Abstract

Hormone therapy and pain management are the primary non-surgical treatment options for endometriosis. Endometriosis tissues respond to hormones similarly to the endometrial tissues within the uterus. Hormonal fluctuations during the menstrual cycle can potentially exacerbate the pain associated with endometriosis. Treatments involving hormone therapy have the potential to modify hormone levels or inhibit the production of specific hormones in the body. It's important to note that hormone therapy can impact fertility and may not be suitable for everyone, particularly those who desire to conceive.

Hormone therapy can be administered through various methods such as oral pills, injections, or nasal sprays. Some of the most commonly utilized options include:

- Oral contraceptives with estrogen and progesterone to control hormones
- Progestins to stop menstrual periods and endometrial tissue growth
- Gonadotropin-releasing hormone antagonist to limit ovarian hormones
- Gonadotropin-releasing hormone agonist to stop ovarian hormones

Pain management for endometriosis often involves the use of pain medications, including nonsteroidal anti-inflammatory drugs (NSAIDs) such as ibuprofen, which can be effective in alleviating the pain. In cases of more severe pain, it may be necessary to consult with a doctor who can evaluate the need for prescription medications.

Keywords: Endometriosis, Nonsurgical treatments, Nonsteroidal anti-inflammatory drugs (NSAIDs), Pain management



Quality Of Life in Women with Endometriosis: A Systematic Review Study

Amir Mohamad Nazari ¹, Akbar Zare-Kaseb ¹, Mohamad Ghasempour ¹, Aram Halimi ², Atefeh Salimi-Akinabadi ³, Sogand Sarmadi ¹, Sara Beigzadeh ¹, Mitra Zandi ¹

1. School of Nursing and Midwifery, Shahid Beheshti University of Medical Sciences, Tehran, Iran

2 School of Public Health and Safety, Shahid Beheshti University of Medical Sciences, Tehran, Iran

3. Clinical Research Development Center, Shahid Modarres Educational Hospital, Shahid Beheshti University of Medical Sciences, Tehran, Iran

Abstract

Background: Endometriosis is a chronic gynecological condition characterized by endometrial-like tissue outside the uterus, often leading to severe pelvic pain and infertility. It affects approximately 10-15% of women of reproductive age, significantly impacting their quality of life (QoL). However, the precise effect of endometriosis on QoL remains unclear. The purpose of this systematic review was to synthesize the available evidence regarding QoL in women with endometriosis to provide insights into potential interventions to enhance their well-being.

Methods: Following the PRISMA guideline, the systematic review protocol was established. Our extensive search for articles from 2012 to September 11, 2023, encompassed databases such as PubMed/MEDLINE, Scopus, and Web of Science. The keywords used were “Endometriosis,” “Quality of Life,” and “Women.” All studies with observational design were included, and review studies, studies with interventional design, letters to the editor, and reports were excluded from this research.

Results: All in all, 1680 articles were found in the databases, which were reduced to 286 by checking the titles and abstracts. Finally, by reviewing the full texts, 158 articles met the criteria of our study. The results show that women with endometriosis may experience side effects such as dysmenorrhea, dyspareunia, and chronic pelvic pain, which cause stress and anxiety and may negatively affect their QoL and sexual function. Evidence has shown that hormonal, drug, and surgical treatments such as laparoscopy and other treatments such as neuromuscular electrical stimulation (NMES) may prevent these complications and improve patients’ QoL.

Conclusion: Endometriosis negatively affects patients’ QoL and sexual function, so effective interventions aimed at improving their QoL should be developed, tested, and integrated into the routine care regimen provided for these patients.

Keywords: Endometriosis, Quality of Life, Sexual function, Women



The Co-Effect of Sensate Focus Technique and Position Changing on Sexual Function of Women Who Use Medical Treatment for Pelvic Endometriosis

Maryam Tajik ¹, Shadab Shahali ¹, Khadijeh Shadjoo ²

1. Department of Reproductive Health and Midwifery, Faculty of Medical Sciences, Tarbiat Modares University, Tehran, Iran

2. Reproductive Biotechnology Research Center, Avicenna Research Institute, ACECR, Tehran, Iran

Abstract

Background: Endometriosis is one of the most common chronic diseases of women that changes their sexual life. The purpose of the current study was to investigate the effect of sensate focus technique and sexual position changing on sexual function of women who use medical treatment for pelvic endometriosis.

Methods: This clinical trial was performed on 80 married women with the ultrasound diagnosis of endometriosis under medical treatment who were referred to the endometriosis clinic of Avicenna Fertility Center to control the disease. Women were randomly assigned to two groups: in the intervention group, a verbal two-hour educational session was held and at the end of the session, an instruction booklet about sensate focus technique was given to the research units, yet the control group received routine treatment. The sexual function and the dyspareunia of the participants were evaluated after 4 and 8 weeks.

Results: Eight weeks after the intervention, the total mean score of sexual function in the intervention group was significantly improved compared to the time before the intervention ($p < 0.001$). The mean score of sexual pain in the follow-up periods in the intervention group was significantly different compared to the time before the intervention and the control groups ($p < 0.001$).

Conclusion: The results of the present study showed that sensate focus technique and sexual position changing simultaneously improve sexual function in women with endometriosis who used medication.

Keywords: Endometriosis, Sensate focus technique, Sexual function, Sexual positions



Effects of Sensate Focus Technique and Position Changing on Sexual Function of Women with Deep-Infiltrating Endometriosis After Surgery: A Clinical Trial

Parisa Tajik ¹, Shadab Shahali ¹, Roya Padmehr ²

1. Department of Reproductive Health and Midwifery, Faculty of Medical Sciences, Tarbiat Modares University, Tehran, Iran

2. Reproductive Biotechnology Research Center, Avicenna Research Institute, ACECR, Tehran, Iran

Abstract

Background: Endometriosis is a disease that affects women during their sexual life. Therefore, sexual health should be a major concern for these women. The purpose of the current study was to evaluate the effect of sensate focus technique and position changing on sexual function of women with deep-infiltrating endometriosis three to six months after the surgery.

Methods: This clinical trial was performed on 80 women aged between 18–45 years old with deep endometriosis who were referred to the endometriosis clinic of Avicenna Fertility Center after surgery for follow-up. They were divided randomly into two groups. In the intervention group, six one-hour virtual training sessions were held. Sexual function was evaluated after 4 and 8 weeks.

Results: Eight weeks after the intervention, the mean score of sexual function in the intervention group was significantly improved ($p < 0.001$). The mean score of visual indicators, and rate of sexual pain in follow-up periods for the intervention group ($p < 0.001$) were significantly different.

Conclusion: Sensate focus technique and sexual position changing improve sexual function in women with deep endometriosis after surgery.

Keywords: Endometriosis, Sensate focus technique, Sexual positions, Sexual function



Hysterectomy for Benign Gynecological Indications

Nasrin Changizi

Ministry of Health and Medical Education (MOHME), Tehran, Iran

Abstract

Due to the affordability and safety advantages of the procedure, the preferred surgical route for hysterectomy is vaginal, provided that the surgeon possesses the necessary skills. Laparoscopic hysterectomy serves as the secondary option. When considering total vaginal hysterectomy (TVH), there are no absolute contraindications. However, certain relative contraindications include malignancy, excessively enlarged uterine size, and significant pelvic adhesions.

Additionally, patient characteristics such as nulliparity, higher body mass index, history of pelvic radiation, and absence of uterine descent can pose challenges to performing a vaginal approach to hysterectomy. There are several predictive factors that contribute to the success of surgery. These factors include having a normal body mass index, a small uterine size, being multiparous, and having some degree of uterine laxity and descent. In a 2019 meta-analysis aimed to compare the complications and operative outcomes of vaginal hysterectomy (VH) and laparoscopic hysterectomy (LH), conducted by Lee et al., a total of 18 studies involving 1618 patients were included.

It was revealed that out of the 17 trials that reported incidences of perioperative complications, no significant difference was observed in the overall complication rates between VH and LH. Moreover, grade I complications were fever, vault hematoma, urinary tract infection, vaginal bleeding, urinary retention, and unspecified infections. No significant differences in the incidence of grade I complications were demonstrated between VH and LH application. The most common grade II complication was transfusion. However, no significant difference in the incidence of grade II complications was demonstrated between VH and LH application. Grade III complications included several problems in cases including surgical, endoscopic, or radiological intervention.

There was one ureteral injury, seven bladder injuries, and two reoperations in the VH group and eight bladder injuries, one vesicovaginal fistula, one ureterovaginal fistula, one reoperation and two pulmonary embolisms in the LH group. Secondary outcomes were operating time, blood loss, intraoperative conversion, postoperative pain, length of hospital stay, and length of recuperation. Eighteen studies reported on operating time and it was revealed that TVH was associated with a shorter operating time than LH. Twelve studies assessed intraoperative conversion and no difference was found between VH and LH (RR 1.16, 95% CI; 0.60 to 2.26, $p = 0.66$), and there was low heterogeneity ($I^2 = 0\%$).

Postoperative pain scores were assessed utilizing the visual analog scale (VAS) in four studies, with evaluations conducted on the day of surgery. Additionally, pain scores were measured 24 hours after surgery in three studies and 48 hours after surgery in three studies.

VH was associated with significantly lower VAS pain scores than LH, 24 h after surgery (WMD -0.53, 95% CI; -0.70 to -0.35, $p < 0.0001$, $I^2 = 0\%$), with low heterogeneity. There was no difference in the length of hospital stay between VH and LH application (WMD -6.57 h, 95% CI; -18.65 to 5.50 h, $p = 0.29$), and there was high heterogeneity ($I^2 = 99\%$); based on the findings mentioned above, it can be concluded that abdominal hysterectomy is less favorable compared to vaginal hysterectomy (VH) and laparoscopic hysterectomy (LH). When making a decision regarding the choice of hysterectomy route, the preference and proficiency of the surgeon may be the most decisive factors. As a result, if LH is performed more often than VH, gynecologists



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in the future will be unfamiliar with VH, leading to a more profound decrease in the implementation of VH. Despite evidence supporting benefits of VH, current statistics indicate VH is underutilized in treating benign gynecologic conditions.

Keywords: Intraoperative conversion, Laparoscopic hysterectomy, Perioperative complications, Total vaginal hysterectomy, Visual analog scale



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Nerve-Sparing in Deeply Infiltrative Endometriosis Surgery

Jessica Papillon Smith

McGill University Health Center, Montreal, QC, Canada

Abstract

Radical resections of deeply infiltrating endometriosis can result in autonomic dysfunction, including urinary, intestinal and sexual sequelae, if there is damage to the nerves of the autonomic nervous system. The goal of this presentation is to define the autonomic nervous system, describe some important neuroanatomic landmarks in the pelvis and review the function of the autonomic nervous system. Moreover, some historical perspectives that have given rise to nerve-sparing surgical approaches for benign gynecologic conditions will be reviewed. Finally, two nerve-sparing endometriosis surgery techniques, the LANN technique described by Possover et al. (Laparoscopic NeuroNavigation) as well as the "No-touch" technique will be assessed. The presentation would be ended with a video review of these concepts, with a step-wise approach to identifying and dissecting out the hypogastric nerve. The hypogastric nerve can be spared during pelvic surgery just as easily as the ureter can, and is an important landmark for preservation of pelvic autonomic innervation.

Keywords: Autonomic nervous system, Deeply infiltrating endometriosis, LANN technique, Radical resections



Understanding Asherman's Syndrome: Diagnosis, Complications, and Management Strategies

Maryam Hafezi

Department of Endocrinology and Female Infertility, Reproductive Biomedicine Research Center, Royan Institute for Reproductive Biomedicine, ACECR, Tehran, Iran

Abstract

The Asherman's syndrome (AS) is defined as an intrauterine adhesion which can cause symptoms such as pain, amenorrhea or oligomenorrhea, infertility, abortion, and abnormal placentation. In most cases, the pregnant uterus is highly vulnerable to trauma involving the basement membrane. This condition can lead to adhesions following procedures such as sharp curettage and reevacuation of retained placenta, as well as after operative hysteroscopy, infections, and uterine artery embolization.

Prevalence of AS is dependent on the method of diagnosis, classification of AS, and population. Several methods are presented for evaluation of uterine cavity and adhesion, including hysterosalpingography (HSG), sonohysteroscopy (3D) with saline or gel media, hysteroscopy, and MRI.

Different hysteroscopy instruments are used to remove adhesion, including the hysteroscope tip, biopsy forceps, scissors, and monopolar or bipolar diathermia, as well as laser devices.

Surgery should be performed in symptomatic patients with infertility and painful periods. Usage of intrauterine devices like balloon catheters or contraceptive devices seems to be effective methods for prevention of re-occurrence of adhesions, but others such as hyaluronic acid gel or polyethylene oxide sodium carboxymethyl cellulose gel in preventing intrauterine adhesions is still under investigation due to conflicting results.

Keywords: Asherman's syndrome, Hyaluronic acid gel, Hysterosalpingography, Hysteroscopy, Sonohysteroscopy



Comparative Analysis of Total Antioxidant Capacity (TAC), Superoxide Dismutase (SOD), Glutathione Peroxidase (GPx) Enzymes, and IL-6 Protein in Different Stages of Endometriosis

Ghazaleh Bigdeli, Maryam Ghobeh, Kambiz Gilany

Department of Biology, Faculty of converging sciences and technologies, Science and Research Branch, Islamic Azad University, Tehran, Iran

Abstract

Background: Endometriosis is a benign disease with features of inflammation and oxidative stress. The severity of endometriosis can shift, extending from mild to severe, with changing clinical expressions. Understanding the molecular modifications related to disease progression is vital for its diagnosis, treatment, and management. In this study, the potential biomarkers levels of TAC, SOD, GPx, and IL-6 were analyzed between different stages of endometriosis.

Methods: Sixty blood serum samples were collected from a cohort of women with endometriosis who had undergone laparoscopic surgery, and endometriosis stages were confirmed by a gynecologist. Thirty samples were classified into mild stages (stages I and II), and thirty were severe (stages III and IV). The colorimetric method and enzyme-linked immunosorbent assays (ELISAs) were performed to measure the serum levels of TAC, SOD, GPx enzymes, and finally IL-6 protein. The biomarker levels of both groups were analyzed using GraphPad Prism version 8.

Results: Serum levels of TAC and SOD showed significant differences. Both potential biomarkers increased in the mild stages (stages I and II). This suggests an increase in oxidative stress in the early stages of the disease. Furthermore, GPx and IL-6 showed no significant difference in all stages as potential biomarkers.

Conclusion: At different stages, several potential biomarkers caused by inflammation and oxidative stress in endometriosis were analyzed. It was found that TAC was imbalanced, and SOD was upregulated in the mild stages. Additionally, it was found that GPx and IL-6 were not affected in the endometriosis. To gain further insights, it is recommended to include a healthy control group. Additionally, employing high-throughput techniques like mass spectrometry-based proteomics or metabolomics can potentially reveal additional biomarkers.

Keywords: Endometriosis, Glutathione peroxidase, Superoxide dismutase, Total antioxidant capacity



Targeted Fatty Acids Analysis of Serum from Mild and Severe Endometriosis Patients Using GC-FID

Ghazaleh Bigdeli, Maryam Ghobeh, Kambiz Gilany

Department of Biology, Faculty of Converging Sciences and Technologies, Science and Research Branch, Islamic Azad University, Tehran, Iran

Abstract

Background: Endometriosis is a begin chronic disease that affects women of reproductive age, with an estimated prevalence of 10%. Studies have shown significantly higher levels of serum total cholesterol (TC), low-density lipoprotein cholesterol (LDL-C), triglyceride (TG), and significantly lower levels of high-density lipoprotein cholesterol (HDL-C). In this study, targeted free fatty acids (FFAs) analysis of endometriosis patients was done serum using GC-FID.

Methods: Ten mild and severe serums from each patient group were collected who had undergone laparoscopic surgery. FFAs from the serum of these patients were extracted. The FFAs were derivatized using Boron Trifluoride/Methanol (BF₃/MeOH). The targeted FFAs were identified using GLC-426 (NU-CHEK-PREP, INC., Japan). One microliter (1 μ l) of derivatized FFAs was injected into the GC-FID. The obtained results were analyzed by MetaboAnalyst version 5.0.

Results: Ten FFAs from twenty-eight targeted FFAs were identified using GC-FID. One potential biomarker was found in the mild stage endometriosis group which was upregulated (Lauric acid: fold change=1.8); however, it was not significant ($p>0.05$). Furthermore, two potential biomarker ratios were found that were upregulated in the mild stage (Lauric acid/myristic acid: AUC= 0.8, $p<0.04$) and (lauric acid/linoleic acid: AUC= 0.8, $p<0.05$). Moreover, our findings revealed a significant enrichment of a hypertension-associated pathway in our analysis of targeted free fatty acids (FFAs) in endometriosis. Additionally, the analysis of drug-related pathways revealed significant enrichment of action pathways for Cerivastatin, Alendronate, and Atorvastatin ($p<0.05$).

Conclusion: Targeted FFAs analysis can be used for endometriosis diagnosis in patients. Lauric acid, as well as the ratios of lauric acid/myristic acid and lauric acid/linoleic acid, have been identified as potential biomarkers for endometriosis. Our results show that lauric acid plays a potentially key role in endometriosis patients. Furthermore, it has been observed that patients with endometriosis may experience hypertension, and the MetaboAnalyst software has suggested several hypertension drugs as potential treatment options.

Keywords: Endometriosis, Free fatty acids, GC-FID, Lauric acid, Serum



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Laparoscopic Management

Alireza Chamani Tabriz

Avicenna Fertility Center, Avicenna Research Institute, ACECR, Tehran, Iran

Abstract

Any increase in PETCO₂ larger than 25% and/or occurring later than 30 minutes after the beginning of peritoneal insufflation should suggest the possibility of subcutaneous emphysema caused by CO₂ during laparoscopy. Subcutaneous emphysema is the most frequent respiratory complication associated with laparoscopic procedures.

Peritoneal insufflation induces alteration of hemodynamics, characterized by decreases of cardiac output, elevations of arterial pressure, and increases of systemic and pulmonary vascular resistances. Hemodynamic changes are accentuated in high risk patients.

The pathophysiologic hemodynamic changes can be attenuated or prevented by optimizing preload before pneumoperitoneum and by vasodilating agents, alpha 2- adrenergic receptors antagonists, high doses of opioids, and Beta_blocking agents.

Keywords: Laparoscopy, Peritoneal insufflation, Pneumoperitoneum, Subcutaneous emphysema



Laparoscopic Surgery for Endometriosis

Safoura Rouholamin

Department of Obstetrics and Gynecology, School of Medicine, Isfahan University of Medical Sciences, Isfahan, Iran

Abstract

Endometriosis is defined as the presence of endometrial-like tissue (glands and or stroma) outside the uterus. The disease is estrogen dependent and found predominantly in women of reproductive age with prevalence ranges from 6 to 10%. The disease presents with symptoms such as pelvic pain, infertility, and can also manifest as asymptomatic cases. Symptoms of endometriosis impact many aspects of a woman's life including daily life activities, sexual function, and personal relationships, thereby leading to a loss of workplace productivity and causing a major economic burden. Surgery should be considered only in specific situations. It is indicated for patients experiencing significant pain, such as dyspareunia and dyschezia, with a pain score (Visual Analog Scale - VAS) greater than 7. Additionally, surgery may be appropriate for patients displaying signs of bowel obstruction or those who have failed previous in vitro fertilization (IVF) cycles. Other indications include persistent pain despite medical therapy, contraindications to or refusal of medical therapy, the need for a tissue diagnosis of endometriosis, exclusion of malignancy in an adnexal mass, and obstruction of the bowel or urinary tract. Symptomatic menopausal patients may be treated more conservatively, in comparison to younger patients.

Surgical approach consists of 10 steps: (1) thorough inspection of the pelvis and the abdomen, (2) mobilization of the ovaries, (3) identification and release of the ureter, known as ureterolysis, (3) removal of endometriotic cysts (4), opening of pararectal spaces (5), opening of the pouch of Douglas (6), entrolysis (7), preservation of the hypogastric nerves (8), careful removal of all endometriotic lesion and nodules, (9) check of uterosacral ligaments, and (10) assessment of both fallopian tubes for the presence of hydrosalpinx and normalization of anatomy.

Keywords: Endometriosis, Hydrosalpinx, Laparoscopic surgery, Symptomatic menopause



Complications of Diagnostic Hysteroscopy

Mehri Mashyekhy

Department of Endocrinology and Female Infertility, Reproductive Biomedicine Research Center, Royan Institute for Reproductive Biomedicine, ACECR, Tehran, Iran

Abstract

The incidence of serious complications in diagnostic hysteroscopy are very low. Immediate and early complications that can occur include uterine perforation, fluid overload, hemorrhage, infection, cervical trauma, air embolism, and electrosurgical burns.

Late complications associated with various procedures include intrauterine adhesions, uterine rupture following metroplasty, hematometra after endometrial ablation, postablation sterilization syndrome following endometrial ablation, and pregnancy complications after endometrial ablation. Uterine perforation may occur at different stages, including during cervical dilatation, surgical intervention, and tissue retrieval. Fluid overload is due to absorption of a high volume of fluid. There are many factors that can lead to an increase in systemic fluid absorption. The management of symptomatic hypervolemic hyponatremia necessitates the involvement of a multidisciplinary team, including anaesthetists, physicians, and intensivists, typically in a high dependency or intensive care unit setting.

The occurrence of this complication can often be prevented by employing proper surgical techniques and effectively utilizing electrocautery to cauterize and seal bleeding vessels during the procedure. Embolism can arise from various factors, such as the presence of air bubbles in the fluid system, the inadvertent reintroduction of hysteroscopic instruments causing a piston-like effect, or leaving the cervix and/or vagina open to air when a vascular injury is present, even if not immediately apparent. Early recognition is crucial in the management of this serious complication.

Keywords: Complications, Diagnostic hysteroscopy, Embolism, Hyponatremia



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Designing the Operating Room for Advanced Laparoscopic Surgeries: A Review of the WHO Surgical Safety Checklist

Nasim Kalantari

Avicenna Fertility Center, Avicenna Research Institute, ACECR, Tehran, Iran

Abstract

The Safe Surgery Saves Lives initiative was established by the World Alliance for Patient Safety, a program of the World Health Organization (WHO), with the aim of reducing global surgical mortality rates. The aim of this initiative was to leverage political commitment and clinical will in addressing critical safety issues. These issues encompass inadequate anesthetic safety practices, preventable surgical infections, and ineffective communication among team members. These issues have been identified as widespread, life-threatening, and preventable challenges across various countries and healthcare settings. To aid surgical teams in mitigating these occurrences, the Alliance, in collaboration with global experts including surgeons, anesthesiologists, nurses, patient safety experts, and patients, has identified a comprehensive set of safety checks that can be implemented in any operating room. A designated checklist coordinator, typically a circulating nurse, but also a clinician or healthcare professional involved in the operating room, is responsible for ensuring that the items on the checklist are checked off.

The Checklist organizes the operation into three distinct phases:

- A) Sign-in: Prior to the induction of anesthesia
- B) Time-out: Prior to the surgical incision
- C) Sign-out: Before the patient departs from the operating room.

Keywords: Operating room, Safety checks, Surgical mortality, World Health Organization



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Unveiling the Complexities of Retroperitoneal Pelvic Anatomy

Mohamed Mabrouk

University College of London Hospitals (UCLH), London, UK

Abstract

The intricate network of structures within the retroperitoneal pelvic region presents a unique challenge in gynaecological surgery. The forthcoming lecture at the esteemed Gynaecology Congress aims to provide a comprehensive exploration of the retroperitoneal pelvic anatomy, emphasizing its relevance to contemporary gynaecological practice. By employing a combination of didactic presentations, detailed anatomical diagrams, and surgical videos, the session is designed to enhance understanding of the spatial configuration and the interrelationship of pelvic organs, vessels, nerves, and connective tissue. This lecture will delve into the importance of this knowledge in minimizing surgical risks and improving patient outcomes. Participants can expect to gain valuable insights into the application of anatomical principles in the management of complex gynaecological conditions, thus bridging the gap between theoretical anatomy and its practical utility in clinical settings. This session is tailored for gynaecologists, surgical trainees, and healthcare professionals who are keen to refine their anatomical knowledge and surgical acumen.

Keywords: Gynaecological surgery, Retroperitoneal pelvic anatomy, Spatial configuration, Surgical risks



Surgical Paradigm of Anterior and Apical Prolapse

Alexander Popov ¹, Mikhail Enikeev ², Ivan Klyushnikov ¹, Anton Fedorov ¹, Elena Efremova ¹

1. Moscow Regional Scientific Research Institute of Obstetrics and Gynecology, Moscow, Russian Federation

2. Sechenov First Moscow State Medical University (Sechenov University), Moscow, Russian Federation

Abstract

Background: Combined descent of anterior and apical compartments is observed in approximately every fifth case of genital prolapse, making it a widespread challenge for surgical management. Recent studies conducted by John DeLancey have confirmed that in the majority of cases, cystocele occurs concurrently with apical descent. There are countless interventions available for the treatment of pelvic organ prolapse (POP). The evolution of treatment methods for pelvic organ prolapse (POP) has progressed from autologous fascia reinforcement to polypropylene insertion. At first, the latter type of surgery was met as a modern solution for all colporrhaphy limitations; however, it is now increasingly prohibited in many countries due to its association with difficult-to-treat mesh-related complications. Nevertheless, there is a lack of surgical alternatives in case of severe anterior-apical prolapse. The main goal of this research was to compare the long-term effect of transvaginal mesh placement with the abdominal route, specifically sacrocolpopexy. Based on the comparison results, a clinical algorithm can be developed to determine the preferred intervention for each type of clinical case. Patient stratification formed the foundation of this algorithm.

Methods: A multicenter prospective study was conducted between 2013 and 2021, involving 192 patients diagnosed with grade III-IV combined anterior-apical prolapse. The study focused on patients with either the absence of posterior prolapse or grade I asymptomatic posterior prolapse who underwent surgical correction. The women participating in the study were divided into two groups. The first group (n=112) underwent vaginal colpopexy using the OPUR kit, while the second group (n=80) underwent sacrocolpopexy either through laparoscopy or a robot-assisted approach, following the standard procedure. Long-term assessment included observation of patients annually after surgery including bimanual examination and using validated questionnaires (PFDI-20, PFIQ-7, PISQ-12) for anatomical and functional outcomes, respectively.

Results: Average follow-up was 48.2±15,8 and 50.0±9,3 months in group I and II, respectively. Anatomically, 6.3% of recurrence was observed in transvaginal mesh group and 16.3% in sacrocolpopexy. Furthermore, in the second group, all cases of recurrence were observed as cystocele. In contrast, in the first group, indirect prolapse formation was more commonly observed, occurring in 5.4% of cases. Based on questionnaires and the results indicating the minimal clinically important difference, the first group demonstrated superior subjective outcomes in terms of symptom relief (96.4% vs. 82.5%) and improvement in social life (91.1% vs. 78.8%). On the other hand, the second group exhibited greater enhancement in sexual life (80.3% vs. 94.7%). During the assessment of long-term outcomes, a total of four cases (3.6%) of mesh erosions were observed. Among these cases, three erosions were located at the vaginal wall, while one was an extrusion into the bladder. Notably, all of these cases occurred in the transvaginal mesh group.

Conclusion: When selecting the appropriate surgical route for patients, several factors should be considered:

- Co-morbidities: The presence of any co-existing medical conditions that could pose contraindications for specific patient positioning or anesthesia during the intervention should be taken into account.
- Prior prolapse surgery: In cases of recurrence following sacrocolpopexy, it is preferable to consider transvaginal mesh placement, and vice versa. For vault prolapse cases, laparoscopic treatment may be more suitable.
- Type of Halban's fascia defect: It is important to note that sacrocolpopexy cannot address lateral defects in the same way that vaginal mesh can. Prevalence of anterior vaginal wall defect relative to apical prolapse: If the descent of the apical prolapse is more pronounced, sacrocolpopexy is generally preferred. Conversely, if the anterior vaginal wall defect is more significant, an alternative approach may be considered. Age of the patients and their social and sexual preferences: Patient age, as well as their social and sexual priorities, should be taken into consideration when determining the most appropriate surgical route.

Keywords: Anterior and apical prolapse, Cystocele, Halban's fascia, Sacrocolpopexy



Laparoscopic Preconceptional Niche Resection After Cesarean Section

Anton Fedorov, Alexander Popov, Marina Chechneva, Vasiliy Petrukhin, Elena Efremova, Yulia Sopova, Tatiana Batenkova

Moscow Regional Scientific Research Institute of Obstetrics and Gynecology, Moscow, Russian Federation

Abstract

Background: The rate of Caesarean sections in the Russian Federation has been increasing by 1% annually. In our clinic, the rate of Caesarean sections is 24.5%. Since 2010, 322 laparoscopic niche repairs following Caesarean sections were performed.

Methods: Over the past 13 years, a total of 322 patients with clinically manifested infertility and large-sized cesarean section niches underwent laparoscopic surgery in our clinic. Indications for surgical treatment were niche formation at preconceptional stage. In all cases, Bettocchi hysteroscopy was performed along with concomitant ultrasound investigation to assess the scar condition and measure blood flow. Indication for surgical treatment was residual myometrial thickness less than 2.8 mm.

Results: Estimated myometrial thickness after surgery was 9.9 mm. Six months after surgery, hydrosonegography was performed again. The thickness of the residual myometrium in the medial aspect was measured to be 7.6 mm. Pregnancy rate was 36% after surgery. No uterine scar rupture was detected. All patients underwent Cesarean section deliveries at 37+ weeks of gestation.

Conclusion: The utilization of ultrasound investigation and hysteroscopy to evaluate the scar condition enabled the identification of patients at high risk of scar margin dehiscence during ongoing pregnancy. This knowledge allowed for the possibility of uterus preservation through a laparoscopic approach in the preconceptional stage for these individuals.

Keywords: Hysteroscopy, Niche Resection, Ultrasound investigation, Uterus preservation



The Prevalence of Laparoscopic Surgeries in Endometriosis Clinic of Avicenna Fertility Center

Ali Sadeghitabar

Avicenna Fertility Center, Avicenna Research Institute, ACECR, Tehran, Iran

Abstract

Endometriosis is one of the complex and mysterious diseases among women's health conditions. This disease severely affects the quality of life of women in reproductive age. Pain and infertility are two important complications of this disease. On the other hand, the best and most effective way to treat this disorder is laparoscopic surgery.

This disease presents numerous challenges and limitations all over the world. On the other hand, few surgical centers around the world, especially in the Middle East and Iran, have focused on this disease. Among patients seeking medical care for the disease, some are treated with medicinal methods and maintenance therapies. Additionally, a subset of patients may require laparoscopic surgery to address the damage and complications affecting various tissues and organ. However, the prevailing question remains: how many patients require surgical intervention?

This study was carried out in the Pelvic Pain, Endometriosis and Advanced Laparoscopy Clinic of Avicenna Fertility Center. Among 5542 new cases referred to this clinic during November 2022 to November 1 2023 (13 months), a total of 483 therapeutic laparoscopic surgeries and 154 hysteroscopic surgeries were performed. Considering that some patients discontinued their initial treatments and were consequently excluded from the study, the remaining individuals accounted for an average of 1.8 visits each, resulting in a total of 5,769 follow-up visits.

In this study, the percentage of surgeries conducted by various surgeons relative to their patients was assessed. The results were documented in tables, revealing a total of 637 surgeries performed over a span of 13 months, involving 11,311 clients. The month of April 2023 recorded the highest percentage of laparoscopic surgeries, with a rate of 12.9%, while the lowest percentage occurred in November 2022, with a rate of 5.6%. On average, 8.71% of patients who had their first visit underwent laparoscopic surgeries. The highest ratio of laparoscopic surgeries to follow-up clients occurred in May 1402, with a rate of 11.5%. Conversely, the lowest ratio was observed in November 2022, with a rate of 5.7%. On average, laparoscopic surgeries accounted for 8.3% of the total follow-up clients. Calculating the percentage of laparoscopies performed in this interval, it was revealed that 4.1% of patients underwent laparoscopic surgery. Due to the limited number of hysteroscopic surgeries, the percentage was significantly lower compared to laparoscopic surgeries (1.36% of the total number of clients and 2.66% of the follow-up patients).

Keywords: Complications, Endometriosis, Hysteroscopy, Laparoscopy



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Vitamin D and Endometriosis: Is There Any Relationship?

Ali-Akbar Delbandi

Department of Immunology, School of Medicine, Iran University of Medical Sciences, Tehran, Iran

Abstract

Endometriosis is a chronic inflammatory disease that affects women of reproductive age. Vitamin D is known to modulate the immune system and control many inflammatory diseases. The available evidence suggests that vitamin D may play a role in the pathophysiology, treatment, and prevention of endometriosis. It was found that vitamin D modulates inflammation and proliferation in endometriotic cells and a lower vitamin D level is associated with endometriosis. A clinical trial showed that vitamin D supplementation reduced endometriosis-related pain. Therefore, such treatment could be a potential therapeutic strategy for managing endometriosis. However, further research is needed to fully understand the mechanisms underlying the relationship between vitamin D and endometriosis and to determine the optimal dose and duration of vitamin D supplementation for treating the disease.

Keywords: Endometriosis, Immune system, Inflammation, Vitamin D



Dienogest, the Magic Pill

Samaneh Rokhgireh

Iran University of Medical Sciences, Tehran, Iran

Abstract

Endometriosis is an estrogen-dependent, chronic inflammatory disease characterized by the presence of endometrial glands and stroma outside the uterus and 10-15% of women of reproductive age suffer from the disorder. Although some women with endometriosis can be asymptomatic, others often present severe dysmenorrhea, chronic pelvic pain, dysfunctional uterine bleeding, infertility, dyspareunia, dyschezia, urinary tract and gastrointestinal symptoms.

Diagnosis of endometriosis is firstly based on medical history, physical examination, and imaging techniques. Management options in endometriosis include medical therapy, surgery, implementation of assisted reproductive techniques (ARTs) in case of associated infertility, or a combination of them.

Despite experiencing rapid pain relief following surgery, there is an anticipated recurrence rate of 40-50% within five years post-surgery. This issue shows the necessity of medical treatment after surgery. Progestins inhibit proliferation of estrogen-induced lesions and reduce pain.

Among approved progestins for the treatment, Dienogest, a fourth-generation progestin has been shown in numerous studies to possess a potent progestogenic effect, a moderate estrogen suppressive effect, and exhibits anti-inflammatory, antiproliferative, and antiangiogenic actions. These properties contribute to reducing the growth of endometriotic lesions. Clinical studies have demonstrated that daily administration of 2 mg Dienogest resulted in significantly higher pain relief compared to placebo and exhibits comparable efficacy to GnRH agonists. Additionally, Dienogest demonstrates fewer hypoestrogenic effects compared to GnRH agonists. Dienogest has emerged as a safe and effective method for prevention of postoperative diseases and reducing pain recurrence after surgery for endometriosis when compared to placebo or no treatment.

On the other hand, long-term therapy with a 2 mg dose of Dienogest has demonstrated effectiveness in pain management and reduction of endometrioma size, without serious adverse events.

Keywords: Assisted reproductive techniques, Dienogest, Endometrioma, GnRH agonists



Co-occurrence of Sex Cord Tumor with Annular Tubules and Endometrioma: A Case Report

Sepideh Khodaverdi ¹, Aboufazel Mehdizadeh Kashi ¹, Banafsheh Tajbakhsh ¹, Alireza Sadeghipour ²,
Samaneh Rokhgireh ¹, Leila Nazari ¹

1. Endometriosis Research Center, Iran University of Medical Science, Tehran, Iran

2. Pathology Laboratory, Rasoul Akram Hospital, Tehran, Iran

Abstract

Endometriosis is a prevalent inflammatory gynecologic disease in women of reproductive age that affects up to 15% of the women. It has been reported that majority of the malignant tumors are associated with endometriosis along with clear cell and invasive endometrioid ovarian malignancy. However, in this case presentation, an association of endometriosis and sex cord tumor with annular tubules was identified. Endometriosis was previously regarded as a condition that shared certain characteristics with cancer, despite not being inherently malignant. However, further research has revealed associations between endometriosis and certain malignant tumors, including clear cell ovarian cancer. In this case report, coincidence of endometriosis and sex cord tumor with annular tubules was identified. The primary objective of this study was to highlight the significance that endometrioma can be associated not only with clear cell and endometrioid ovarian cancer but also with other types of ovarian cancers. This case was included in the study as a basis for further research in the event of similar cases being observed.

Keywords: Annular tubules cancer, Endometrioma, Endometriosis, Ovarian cancer, Sex cord tumor



Impact of Adenomyosis on Infertile Patients

Zahra Heidar

Shahid Beheshti University of Medical Sciences, Tehran, Iran

Abstract

Adenomyosis is a common gynecological disorder, affecting women of reproductive age. Adenomyosis is diagnosed in premenopausal women solely on the basis of pathological examination after hysterectomy. The first imaging tool employed to diagnose adenomyosis was hysterosalpingography. Today, the diagnosis can be established by a transvaginal ultrasound (TVS) scan or magnetic resonance imaging (MRI). Higher rates of implantation failure, recurrent pregnancy loss, and preterm birth have been associated with this diagnosis. The absence of an exact image classification system has limited our ability to assess adenomyosis in terms of its extent and severity. Assessing the severity of adenomyosis would permit precise therapy recommendations. A number of therapy approaches exist. The studies have primarily focused on the alleviation of symptoms, such as bleeding disorders or dysmenorrhea. Randomized controlled trials evaluating the impact of adenomyosis on reproductive outcomes are still missing. Surgery alleviates the symptoms and has been successful regarding fertility outcomes, but may increase the risk of uterine rupture. HIFU appears to be a safe treatment option for patients who wish to conceive. However, further randomized clinical trials are required to compare HIFU with other treatment options. Other approaches for the treatment of adenomyosis in infertility patients such as hysteroscopic ablation or UAE cannot be recommended without restriction at the present time. Pretreatment with GnRH analogs prior to natural conception or as an ultra-long protocol before ART is associated with a positive effect on reproductive outcomes. Surgery should be offered to symptomatic women who have experienced repeated implantation failure after ART. The limited body of existing data hinders the ability to provide unequivocal evidence-based recommendations. Possibly, new pharmacological approaches such as selective progesterone receptor modulators, AIs, or GnRH antagonists may provide benefits in terms of reproductive outcomes in women with adenomyosis and infertility.

Keywords: Adenomyosis, GnRH antagonists, HIFU, Infertility, Transvaginal ultrasound



Laparoscopic Surgery for Bowel Endometriosis

Behnaz Nouri

Department of Obstetrics and Gynecology, Shahid Beheshti University of Medical Sciences, Tehran, Iran

Abstract

The potential need for surgery due to medical treatment failure is approximately 10%, and there is a potential risk of developing bowel obstruction ranging from 1% to 2%.

A multidisciplinary surgical approach is typically necessary for the management of endometriotic lesions, taking into consideration factors such as their location, size, and depth of infiltration. Laparoscopy is the preferred surgical method, although in some cases, laparotomy may be required depending on the anatomical site of the disease, the complexity of the procedure, and the surgeon's laparoscopic skills.

The surgical approach can be either conservative or definitive. Conservative techniques include selectively performing shaving for lesions that do not extend beyond the serosa, as well as discoid full-thickness bowel excision and repair. Another option is segmental bowel resection and anastomosis, which is indicated in cases of stenosis, multifocal lesions, sigmoid involvement, and lesions larger than 3 cm or involving more than 50% of the bowel wall circumference (90% in the rectosigmoid area).

It is important to note that complication rates tend to increase with the extent of resection. Unfortunately, determining complete excision can be challenging through gross visualization alone, as approximately 20% of specimens have positive margins, making it difficult to ensure complete removal. The surgical treatment of rectovaginal endometriosis has been associated with major complications in 3 to 10 % of patients. Among these complications, urinary retention was the most frequently reported, potentially attributed to bladder denervation. Bladder dysfunction was predominantly observed in women who underwent colorectal resection, although it was not exclusive to this group. Rectovaginal fistula was reported in up to 10 % of women undergoing surgery for rectovaginal endometriosis. The rates of complications, listed in order of frequency, were as follows: rectovaginal fistula (2.7 %), anastomotic leakage (1.5 %), and abscess (0.3%).

Keywords: Bladder dysfunction, Bowel endometriosis, Laparoscopy, Urinary retention



Step by Step Endometriosis Surgery

Ameneh Sadat Haghgoo

Department of Minimally Invasive Gynecologic Surgery, Nikan Hospital, Tehran, Iran

Abstract

Endometriosis, as a prevalent disease, often requires surgical approach due to its involvement with crucial and important parts of the pelvic and abdominal organs; therefore, the surgical treatment of endometriosis necessitates careful considerations, extensive knowledge, and experience. Pre-operative assessment and preparation for surgery include taking a complete medical history, clinical examination, and performing imaging techniques such as ultrasonography and lab tests. If further investigations are required to assess the involvement of ureter, bladder, bowel, or to screen malignancy, further assessments such as MRI, DTPA scan, or colonoscopy may be necessary. The initial steps of deep endometriosis (DE) surgery involve placing the patient in lithotomy position, which allows for better access to pelvic cavity, uterus, bladder, and bowel while reducing the risk of nerve injury. Subsequently, after inserting the laparoscope, a systematic laparoscopic inspection is recommended. Following this, placement of secondary trocars for various instruments should be tailored to the individual's anatomical situation and surgical requirements. Typically, endometriosis surgery involves several steps. These include identifying the lesions, releasing and isolating them, performing adhesiolysis to remove adhesions, exploring and assessing the extent of endometriosis, and restoring pelvic anatomy. Additionally, complete excision of endometriosis is performed.

The surgery begins with the dissection of areas free of disease, such as para-vesical and lateral para-rectal spaces, followed by ureterolysis, nerve dissection, rectovaginal space dissection, vesico-vaginal space dissection, and ureteric tunnel dissection. To optimize exposure, manipulators, ovariopexy, and additional ports may be used if necessary. During the surgery, preoperative management and intraoperative evaluation play a crucial role in making the final decision for surgical planning based on intraoperative findings. A multidisciplinary approach and collaboration between gynecologists, urologists, and colorectal surgeons are essential for successful management of the disease. There are several surgery techniques for ureteral endometriosis including ureteral dissection, ureterolysis, insertion of a double J pigtail (JJ) stent, uteroretrostomy, and ureteroneocystostomy. The selection of these methods is individualized based on factors such as extent, location, severity of lesions, as well as the severity of hydronephrosis and the patient's renal function.

Certain techniques are suggested for bladder endometriosis in surgical treatment including transurethral resection (TUR), partial resection, as well as shaving. However, a complete resection with TUR is unachievable, since the nodule develops from the outer layer towards the inner layer of the bladder wall. Furthermore, an endometriosis nodule is not always detectable with cystoscopy. TUR has a high risk of bladder perforation and a recurrence of endometriosis. Therefore, TUR cannot be considered an efficient treatment of bladder endometriosis.

The second step of surgery for DE involving the rectovaginal area can employ various techniques such as shaving, discoid excision, or segmental resection. The choice of technique depends on factors such as the size, location, extension of the lesion, severity of nodules, number of nodules (single or multifocal), as well as the degree of infiltration.

The surgical strategy for diaphragmatic endometriosis could be the combination of resection and ablation techniques, utilizing both laparoscopy and thoracoscopy routes. This can be achieved through conventional or robotic-assisted minimally invasive approaches, aiming for a conservative approach whenever possible. This approach helps to limit postoperative adhesions between the liver and the diaphragm, as well as avoid diaphragmatic paralysis.

Excisional techniques used to surgically treat deep endometriosis (DE) can result in inadvertent damage to the autonomic nervous system of the pelvis, leading to urinary, anorectal, and sexual dysfunction. Proper identification and preservation of the hypogastric nerves within the uterosacral ligament (USL) deep endometriosis



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(DE) complex during laparoscopic nerve-sparing DE surgery are important and can minimize the risk of inadvertent nerve injury. Laparoscopic excision of deep endometriosis nodules involving the sciatic nerve is a challenging procedure, requiring good anatomical knowledge, surgical skills, preliminary specific training, and multidisciplinary postoperative care. By following sequential steps, the surgeon may reduce the risk of hemorrhage originating from the external iliac, obturator, and pudendal vessels, preserve somatic nerves, and successfully excise deep endometriosis nodules.

Keywords: Bladder endometriosis, Bowel endometriosis, Ureteral endometriosis, Hypogastric nerve injury



Impact of Endometriosis on Quality of Life

Solmaz Vahedi

Tehran University of Medical Sciences, Tehran, Iran

Abstract

Background: Endometriosis is one of the most common gynecological diseases. Globally, endometriosis affects more than 190 million women and those assigned female at birth. This corresponds to 10% of women in reproductive age. Individuals suffering from the disorder may experience devastating effects on their quality of life, impacting both their physical and mental health which may result in difficulty to perform even basic everyday tasks. The main complaints of patients with endometriosis are pain and fertility problems. Symptoms of endometriosis can impact the psychological functioning of the patients and significantly compromise their mental health. The diagnosis may be overlooked in primary care, leading patients to believe that this oversight results in unnecessary suffering and a diminished quality of life (QoL). However, the impact of endometriosis has been inadequately researched despite the multi-dimensional nature of its effects on quality of life. Many of these effects have a negative impact on psycho-social parameters. All women who suffer from endometriosis express pain. Since pain has negative impacts on quality of life, knowing the impact of this disease on quality of life is important. Hence, the objective of this study was to conduct a comprehensive and systematic literature review on the impact of endometriosis on health-related quality of life.

Methods: A comprehensive search was conducted up to 2023 in electronic databases including PubMed, ProQuest, Google Scholar, Scopus, and Science Direct to identify potentially relevant studies. A systematic review was conducted to evaluate quality of life in patients with endometriosis. The search terms used included endometriosis, quality of life, and women.

Results: The results showed that the quality of life in patients with endometriosis was significantly impaired. Women affected by endometriosis experience a greater impairment in quality of life (QoL) compared to non-endometriosis conditions, affecting both the mental and physical spheres. Endometriosis is associated with worsened physical, mental, and social functioning, as well as overall well-being. Among the various domains of QoL, bodily pain is the most affected. Pain significantly affects women's experience of endometriosis.

Conclusion: Endometriosis is associated with significantly poorer reports of QoL among adolescents and young women compared to their unaffected peers. In cases of endometriosis, earlier onset of menarche is associated with lower physical health-related QoL, whereas severe pelvic pain is associated with both poorer physical and mental health-related QoL among cases. Impairment in QoL is not exclusive to adults but also affects younger patients with endometriosis.

Keywords: Endometriosis, Quality of life, Women



The Role of Midwives in Raising Endometriosis Awareness

Fahimeh Ranjbar

Nursing and Midwifery Care Research Center, Health Management Research Institute, Iran University of Medical Sciences, Tehran, Iran

Abstract

Endometriosis is a complex condition with significant societal, medical, and economic implications. It imposes physical and psychological challenges for affected women and currently, there is no known prevention or cure for this condition. One of the main issues is the inadequate awareness among women and healthcare providers, which often leads to substantial diagnostic delays, reducing overall quality of life and increasing the risk of disease progression. Midwives, as frontline primary healthcare providers, have the potential to influence awareness and support women with endometriosis. They have the potential to make a significant impact by promptly identifying and referring patients to specialized services, thereby contributing to the efficient management of this condition. Midwives' involvement in educational campaigns, informative seminars, and social media initiatives aimed at enhancing public awareness, particularly among teenagers, empowers women and facilitates early detection. Social stigma surrounding menstruation often prevents open dialogue, making it crucial for midwives to initiate inclusive discussions on topics like menstruation to address the knowledge gap, especially in low- and middle-income countries (LMICs). Additionally, midwives can provide valuable assistance in coping with menstrual discomfort, facilitate the establishment of support groups, and collaborate with non-governmental organizations specializing in endometriosis. These efforts provide communication platforms, promote resource sharing, and alleviate psychological distress commonly associated with the condition. Sharing personal stories of women living with endometriosis is also significant in raising awareness and combating the stigma.

In addition to raising public awareness, midwives should advocate for increased research funding and improvements in healthcare policy to enhance awareness and accessibility of care for endometriosis.

Ultimately, a multidisciplinary approach is essential to ensure women receive appropriate healthcare and timely diagnoses. Midwives, as primary caregivers, play a crucial role in increasing awareness and delivering comprehensive care for endometriosis. Their involvement is instrumental in early detection, improving management strategies, and enhancing the quality of life for individuals affected by this condition.

Keywords: Awareness raising, Endometriosis, Low-and middle-income countries, Social stigma



Laparoscopic Surgery and Minimally Invasive Procedures

Shahla Nouri Ardabili

Department of Gynecology, Atieh Hospital, Tehran, Iran

Abstract

Laparoscopic surgery has revolutionized the field of gynecology by providing minimally invasive procedures for the treatment of various uterine conditions. For either intramural or submucosal myomas, it is possible to ligate the main uterine artery on one side. To initiate the procedure for pedunculated myoma, a dilute vasopressin solution is injected into the serosa and myometrium overlying the myoma until the tissue blanches. A different approach involves placing one or two ligatures around the pedicle and removing the myoma by using electrosurgery to cut through the serosa surrounding its base, approximately 1-2 cm above the point where the pedicle is attached. To ensure hemostasis, the pedicle can be sutured afterwards. This method reduces the likelihood of future uterine rupture, a complication that has been documented during pregnancy.

During the procedure, the laparoscopic surgeon is responsible for dissecting either the ureter or the uterine vessels. The bladder is carefully separated from the uterus and upper vagina using either scissors or gentle blunt dissection until the anterior vagina is clearly identified. If preservation of the ovary is desired and the uterus is large, the utero-ovarian ligament/round ligament/fallopian tube junction can be divided using a 30 or 45 mm GIA stapler. Many complications are related to the use of staplers. The safer approach is to ligate or coagulate the vascular pedicles. In patients with a large uterus, a selective ligation of the uterine artery without involving its adjacent vein is performed. This allows the uterus an opportunity to reestablish its blood supply to the general circulation. The rates of bladder and ureteral injury during laparoscopic hysterectomy have been reported to be as high as 2.9% and 1.75%, respectively. Approximately 5-10 minutes before the cystoscopy procedure, a single ampule of Indigo carmine (40 mg in 5 ml) is intravenously injected to enhance the visualization of ureteral patency.

Keywords: Dilute vasopressin solution, Electrosurgery, Intramural myomas, Submucosal myomas



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Transvaginal Natural Orifice Transluminal Endoscopic Surgery (vNOTES)

Behnaz Nouri

Department of Obstetrics and Gynecology, Shahid Beheshti University of Medical Sciences, Tehran, Iran

Abstract

vNOTES refers to an emerging field of surgery that allows to access the peritoneal cavity through vaginal incisions. NOTES compared to laparoscopic surgery has reduced post-operative pain, improved cosmesis, reduced physiological and immunological responses to surgery, and the potential for faster recovery. It may also provide improved access in patients with factors such as dense adhesions or morbid obesity. NOTES was initially employed in gynecology in 2012 for the removal of adnexa in cases of benign pathology. It has since been utilized for various procedures such as ovarian cystectomy, salpingectomy for ectopic pregnancy, hysterectomy, and cuff suspension procedures. In this study, patients were placed in lithotomy position. A circular incision was made around the cervix. Therefore, surgical access to the pouch of Douglas and utero-vesical fold was established. The uterosacral ligaments were transected and a Gelpoint device was set up and inserted. A pneumoperitoneum was then created to proceed with the hysterectomy.

Keywords: Gelpoint device, Hysterectomy, Transvaginal NOTES



Mechanisms and Clinical Trials of Anti-fibrotic Drugs for Prevention of Fibrosis in Endometriosis

Farzaneh Dastaran ¹, Elaheh Seyed Hosseini ²

1. Avicenna Research Institute, ACECR, Tehran, Iran

2. Gametogenesis Research Center, Institute for Basic Sciences, Kashan University of Medical Science, Kashan, Iran and Anatomical Sciences Research Center, Institute for Basic Sciences, Kashan University of Medical Sciences, Kashan, Iran

Abstract

Fibrosis is a molecular hallmark of pathogenesis in all phenotypes of endometriosis and a complicated condition with unclear underlying causes. The formation of fibrosis was discovered to be primarily mediated by platelets, macrophages, and ectopic endometrial cells. Every cell type interacts with one another to produce soluble molecules, which mostly include transforming growth factor- β (TGF- β), collagen, and α smooth muscle actin (α SMA) which lead to fibrosis. As a result, the mechanisms behind the development of fibrosis may lead to new potential targets for endometriosis therapies. The studies showed that some drugs that suppress TGF- β /ERK, p38MAPK, CREB-binding protein (CBP)/ β -catenin, and Wnt/ β -catenin signaling reduce fibrosis in endometriosis. In the current study, the roles of biologic mechanisms and signaling pathways in the fibrogenesis process of endometriotic tissues were investigated. Additionally, clinical studies that explore the potential anti-fibrotic effects of medications by targeting these pathways were examined. This article can be used as a reference for conducting future studies that target fibrosis to prevent or treat endometriosis with the ultimate goal of developing non-invasive and user-friendly treatments that minimize side effects for patients with endometriosis.

Keywords: Anti-fibrotic drugs, Endometriosis, Fibrosis



The Role of Iranian Traditional Medicine in the Treatment of Endometriosis

Maryam Khazaei Sani

Banooye Armaghane Teb Company, Tehran, Iran

Abstract

Endometriosis is a chronic disorder that is influenced estrogen and characterized by the presence of endometrial tissue outside the uterine cavity. The condition presents significant challenges in terms of diagnosis and treatment. Definitive diagnosis of the disease is through direct observation of lesions in laparoscopy and biopsy. Treatment includes pain control, hormonal interventions, and surgical procedures including laparoscopy. In this research, the modern medicine and traditional Iranian medicine for the diagnosis and treatment of endometriosis were evaluated.

A 29-year-old female patient presented with complaints of lower abdominal pain, pain during sexual intercourse, and secondary infertility lasting for 4 years. She was referred to a gynecologist and requested a transvaginal ultrasound, which was performed by an ultrasound specialist to diagnose endometriosis including deep infiltrating endometriosis (DIE). The doctor prescribed medication, but subsequent vaginal ultrasounds after hormonal therapy yielded limited success. In addition, the patient was advised by several gynecologists in infertility centers to undergo laparoscopy and IVF for treatment and fertility. However, seeking alternative options, the patient turned to traditional Iranian medicine.

The traditional treatment regimen for the patient encompassed six key health factors. Firstly, a tailored diet was implemented to address mood and eliminate soda foods. Secondly, regular exposure to fresh air was encouraged. Thirdly, the patient was advised to ensure an adequate duration and quality of sleep. Fourthly, stress reduction techniques were emphasized, along with fostering positive thoughts. Fifthly, engaging in physical activity and scheduled walking were recommended. Lastly, the patient was encouraged to adopt a high-fiber diet with natural laxative properties. With the patient strictly adhering to Iranian medicine measures and the recommendation to use a herbal and natural vaginal product called Rezasik Vaginal Pack, a clinical trial for this product is currently underway at one of Iran's university centers. Furthermore, efforts are being made to patent the product in several countries, including Iran, Germany, India, China, and Turkey. One of the ingredients in the aforementioned herbal medicine is Abu Jahl, known for its laxative properties that help eliminate soda and thick phlegm. It also acts as an absorbent, targeting impurities deep within the body and aiding in their dissolution and fragmentation. The herbal medicine is highly absorbent, allowing for a gradual release of the drug within the body. Cotton fibers act as a drug carrier, facilitating this controlled release. As a result, the pathogenic mixture is diluted and eliminated from the pelvic organs during the course of treatment with Iranian medicine measures. Notably, despite the patient being pregnant, the ultrasound conducted at 7 weeks and 1 day revealed the presence of a fetal heart. Additionally, it is worth mentioning that smaller endometriosis cysts were still observed in the ovaries compared to the previous ultrasound.

This case study highlights the potential of Iranian traditional medicine in the development of non-invasive methods and chemical drugs.

Keywords: Endometriosis, Integrated medicine, Traditional Iranian medicine, Fertility



Sigmoid Perforation and Appendicitis Caused by Endometriosis: A Rare Case Report

Sedigheh Shariatmoghani ¹, Somayeh Sadat Shariatmaghani ²

1. School of Health, Mashhad University of Medical Sciences, Mashhad, Iran

2. Division of Hematology and Oncology, Department of Internal Medicine, Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran

Abstract

Endometriosis is caused by the ectopic growth of the endometrium outside the uterus and commonly affects the pelvic organs, including the bowel. However, endometriosis is considered a rare cause of colon perforation. Our patient was a 40-year-old female (G1 P1 L2 Ab0) with a medical history of mild endometriosis. She presented with a sudden and continuous pain in the hypogastrum, primarily on the left side which had been occurring for the past 3 days. There were no findings in the abdominal ultrasound, except for a 10x7 mm endometrioma in the left ovary. The transvaginal ultrasound revealed adhesions of both ovaries to the uterus, as well as adhesion of the rectum to the right adnexa. Additionally, a 6x10 mm DIE (deep infiltrating endometriosis) nodule was detected in the retrocervix. No free fluid was observed in the pelvis. Afterward, the patient developed a high fever and experienced shaking chills. During abdominal examination, rebound tenderness was observed in the lower left quadrant (LLQ). The patient exhibited elevated levels of erythrocyte sedimentation rate (ESR), C-reactive protein (CRP), and leukocytosis in the laboratory data. The abdominal and pelvic CT scan with contrast revealed an elongated segment of increased wall thickness in the rectosigmoid area, accompanied by fat stranding and inflammation of the surrounding mesentery. Additionally, a hypodense region containing both liquid and gas density was observed. The patient received treatment with broad-spectrum antibiotics. But after 48 hours, the abdominal pain became very severe so she underwent emergency laparoscopy and then laparotomy. Initially, approximately 500 cc of thick and bloody secretions were drained, and it was observed that the tip of the appendix was perforated and in a gangrenous state. In addition, there was perforation in the sigmoid area. The patient underwent appendectomy, pelvic lavage, and colostomy. The pathological report indicated gangrenous appendicitis and periappendicitis with associated endometriosis. Surgeons and gynecologists should always bear in mind this rare but crucial diagnosis as part of the differential diagnosis for acute abdomen in post-menarche women who have a history of endometriosis or concurrent gynecological and gastrointestinal symptoms

Keywords: Appendicitis, Endometriosis, Laparoscopy, Laparotomy sigmoid perforation



Endometriosis and Acupuncture: A Review Article

Leila Nasiriani

Tehran University of Medical Sciences, Tehran, Iran

Abstract

Background: Acupuncture involves inserting very thin needles into the body at different locations and depths. It aims to balance the life forces known as Qi that is responsible for different health issues like endometriosis. Acupuncture as a non-pharmacological therapy for women with infertility was first reported in 1988. Endometriosis is defined as the presence of endometrial tissue outside the uterine cavity. It is a multifactorial, estrogen-dependent, chronic, inflammatory, gynecological condition that can result in pelvic pain and infertility. Chronic pelvic pain, dysmenorrhea, dyspareunia, fatigue, and infertility are the most common symptoms that have a profound effect on women's life. Acupuncture may be an effective treatment option for endometriosis.

Methods: Full-text clinical studies, case reports, and observational studies with abstracts written in English were searched using the keywords "acupuncture AND endometriosis, pain, infertility" in six databases including Google, Google scholar, PubMed, Elsevier, National Library of Medicine, and Cochran.

Results: Studies which addressed the efficacy of acupuncture in treating endometriosis revealed that the technique significantly increased the pregnancy and ovulation rate among women with endometriosis and reduced the rate of miscarriage and pain. Acupuncture has a positive effect on relieving pain and peripheral blood CA125 levels. Warm needle acupuncture appears to be more effective in the treatment of infertility. Studies showed that infertility drugs may increase the risk of cancer.

Conclusion: The investigation of acupuncture as a treatment for reproductive dysfunction in Iran has been limited. There is a need for studies with sufficient sample sizes to provide a more comprehensive understanding of its efficacy

Keywords: Acupuncture, Endometriosis, Infertility, Non-pharmacological therapy



Adverse Pregnancy Outcomes After Uterine Adenomyosis

Nafiseh Shams Nateri, Helma Safakheil

Clinical Cares and Health Promotion Research Center, Karaj Branch, Islamic Azad University, Karaj, Iran

Abstract

Background: Adenomyosis is a benign gynecological disorder associated with subfertility, pelvic pain, and abnormal uterine bleeding that have significant consequences for the health and quality of life of women. In adenomyosis, the endometrial tissue and stroma develop abnormally within the myometrium, resulting in an ectopic growth pattern. Adenomyosis is predominantly diagnosed in women who have had children, typically between the ages of 40 and 50. The purpose of this article was to evaluate the adverse pregnancy outcomes among women with adenomyosis in comparison to women without adenomyosis.

Methods: A systematic literature search was conducted, reviewing 25 articles published between 2015 and 2023, using the keywords adenomyosis, endometriosis, and infertility. All of the selected articles met the criteria for evidence level 1, ensuring a high standard of evidence. Also, the investigation was carried out using PubMed, EMBASE, and Cochrane Library. Data were analyzed to assess the adverse pregnancy outcomes among women with adenomyosis.

Results: Ten studies have consistently indicated that women with adenomyosis have a higher likelihood of experiencing adverse pregnancy outcomes, including preterm birth, premature rupture of membranes (PROM), spontaneous abortion, and small-for-gestational-age (SGA) infants. Additionally, five of these studies have reported a higher prevalence of pre-eclampsia in women with adenomyosis compared to those without the condition. However, there was no evidence for the association of adenomyosis with fetal malpresentation. Data from a single study also demonstrated that the likelihood of low birth weight (LBW) was significantly higher for women with adenomyosis. Only one study specifically examined the relationship between adenomyosis and gestational diabetes mellitus (GDM), while two studies found no significant difference between the group of women with adenomyosis and those without the condition in terms of pre-eclampsia prevalence.

Conclusion: It seems that adenomyosis has a detrimental impact on pregnancy outcomes, increasing the likelihood of preterm birth, SGA, and pre-eclampsia; however, the potential confounding effects of other variables such as maternal age, parity, gestational age at delivery, and previous medical history could not be assessed. The findings of the systematic review suggest the advantages of closer prenatal monitoring of pregnant women for adenomyosis to prevent adverse pregnancy outcomes.

Keywords: Fetal malpresentation, Pre-eclampsia, Subfertility, Uterine adenomyosis



Effects of Adenomyosis on Fertility

Nafiseh Shams Nateri, Helma Safakheil

Clinical Cares and Health Promotion Research Center, Karaj Branch, Islamic Azad University, Karaj, Iran

Abstract

Background: In adenomyosis, there is an ectopic development of endometrial tissue and stroma within the myometrium. The causal relation between adenomyosis and infertility has not yet been fully established. The purpose of this article was to evaluate the adverse effects of adenomyosis on fertility and ART outcomes.

Methods: A comprehensive literature search was conducted, encompassing 25 articles published between 2015 and 2023, utilizing the keywords adenomyosis, endometriosis, and infertility. All of the selected articles met the criteria for evidence level 1. The investigation was performed using databases of PubMed, EMBASE, and Cochrane Library. Data were analyzed to assess the effects of adenomyosis on fertility and ART outcomes.

Results: A causal relation between adenomyosis and infertility has been repeatedly suggested in twelve studies; but definitive conclusions are still lacking. It seems the relation between adenomyosis and ART outcomes affected different conditions like main causes of infertility. Several studies presented conflicting findings. While some studies did not report a statistically significant impact on pregnancy rates, others identified a significant negative association between adenomyosis and the likelihood of both pregnancy and birth. In seven studies, there was an association between adenomyosis and spontaneous abortion. Two studies specifically reported an elevated risk of the latter, which is directly linked to the pathology under consideration.

Conclusion: The harmful effects of adenomyosis on IVF seems to be related to reduced implantation rates, increased risk of early pregnancy loss and, as a result, a decrease in live births rates which could be directly related to the anatomo-physiopathological changes generated by adenomyosis in the female genital tract, including impaired utero-tubal transport, reduced sperm function due to high nitric oxide levels in the uterine cavity, excessive angiogenesis mediator secretion, reduced expression of implantation markers, inadequate decidual reaction owing to the overexpression of P450 aromatase. However, due to the conflicting results, further studies are needed to investigate the relationship between adenomyosis, infertility, and related factors. It is important to consider modifying general conditions such as age, cause of infertility, and maternal BMI to obtain more comprehensive and reliable conclusions.

Keywords: Adenomyosis, Assisted reproductive technology, Fertility, IVF



Successful Laparoscopic Management of Bladder Endometriosis: A Case Report in a 44-Year-Old Woman

Maryam Hashemi ¹, Farshad Gholipour ²

1. Department of Obstetrics and Gynecology, School of Medicine, Isfahan University of Medical Sciences, Isfahan, Iran

2. Department of Urology, School of Medicine, Isfahan University of Medical Sciences, Isfahan, Iran

Abstract

A 44-year-old woman, who had previously undergone two cesarean sections, presented with a history of chronic pelvic pain and abnormal uterine bleeding (AUB) over the past three years. Pelvic sonography revealed a 4 cm nodule in the bladder, raising suspicion of bladder transitional cell carcinoma (TCC). To further investigate, a cystoscopy was performed by a urologist, confirming the presence of a mass near the ureteral orifices in the dome of the bladder. A biopsy of the mass was conducted during cystoscopy, ruling out TCC and confirming bladder endometriosis. The patient was subsequently referred to a gynecologist. Based on the findings, the decision was made to proceed with a total laparoscopic hysterectomy (TLH) and resection of the full-thickness bladder nodule. Before the laparoscopy, a transurethral resectoscope with monopolar energy was used to carefully remove the bladder's mucosa and muscularis circumferentially around the lesion, without entering the peritoneal cavity. This cystoscopic delimitation of the lesion helped identify the healthy borders of the nodule more easily and facilitated the subsequent partial cystectomy. The TLH was performed, and the lesion was resected using a laparoscopic monopolar hook. Subsequently, the bladder defect was closed in two layers. Both ovaries were preserved, and no deep endometriosis (DE) was observed in other pelvic or abdominal sites. The pathology report confirmed the presence of bladder endometriosis. The patient had an uneventful postoperative period.

Keywords: Bladder transitional cell carcinoma, Cesarean sections, Deep endometriosis, Total laparoscopic hysterectomy



The Relationship Between Endometriosis and Hypertensive Disorders in Pregnancy: A Systematic Review and Meta-Analysis

Foruzan Sharifipour ¹, Shahla Faal Siahkal ²

1. Midwifery Department, Faculty of Nursing and Midwifery, Kermanshah University of Medical Sciences, Kermanshah, Iran

2. Department of Midwifery, Marand Branch, Islamic Azad University, Marand, Iran

Abstract

Background: Endometriosis is a chronic and debilitating condition which can affect the entire reproductive life course of women with a potentially detrimental effect on pregnancy. The purpose of the current study was to assess the relationship between endometriosis and hypertensive disorders in pregnancy.

Methods: Relevant articles from Cochrane Library, PubMed, Scopus, Science Direct, Web of Science, and EMBASE databases up to September 2023 were searched. Our inclusion criteria were published observational full-text articles. The pooled data was analyzed using Review Manager 5.3, utilizing both fixed and random effects models. The quality of the included studies was assessed using Downs and Black Checklist.

Results: After reviewing 705 articles, 21 studies were included for meta-analysis. Based on this study's result, there were a relationship between endometriosis and gestational hypertension (OR = 1.14, 95% CI: [1.10, 1.18]; I²=0%, P < 0.00001; N=11), preeclampsia (OR = 1.28, 95% CI: [1.22, 1.33], P < 0.00001; N=10), and hypertensive disorders in pregnancy (OR = 2.37, 95% CI: [1.88, 2.99]; I²=0%, P < 0.01; N=4).

Conclusion: This study confirmed that gestational hypertension and preeclampsia had the strongest relationship with endometriosis. Awareness of this issue plays a crucial role in identifying and implementing effective strategies aimed at reducing the occurrence of hypertensive disorders in pregnancy.

Keywords: Endometriosis, Gestational hypertension, Preeclampsia, Systematic review



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Analysis of Scientific Collaborations Among Iranian Researchers in the Field of Endometriosis Palliative Care: A Study Based on Web of Science Database (2015-2022)

Hoda Zaraj¹, Manijeh Firoozy², Leila Abdi³

Department of Psychology and Health, Caspian Faculty, University of Tehran, Tehran, Iran .¹

,Department of Cognitive Science, Faculty of Psychology and Educational Sciences, University of Tehran .²
Tehran, Iran

3. Payam Noor University of Kermanshah, Kermanshah, Iran

Abstract

Background: The objective of the present study was to analyze the social network and structural characteristics of endometriosis palliative care studies. This analysis was conducted by examining the co-authorship network of articles available on the Web of Science between 2015 and 2022.

Methods: This study employed a practical approach, utilizing scientometric methods and social network analysis. The collected data were analyzed using Microsoft BibExcel software for data extraction, while VOSviewer software was utilized for data visualization and mapping. Furthermore, UCINET software was employed to analyze social networks through the application of centrality measures.

Results: The research findings indicate a growing trend in collaborative articles focusing on endometriosis palliative care across different years. Moreover, there is a positive correlation between the researchers' rank and betweenness centrality measures, indicating that as these measures increase, researchers receive a higher number of citations. Regression analysis further reveals a direct and positive relationship between centrality scores and researchers' productivity in the field of endometriosis palliative care. These findings underscore the importance of collaborative networks and social connections in facilitating research productivity and impact within this specific domain. In this context, it was observed that as the predictor variables improved, there was a corresponding improvement in the subjects' productivity. Additionally, when researchers with a centrality role were selecting research partners, the most important criteria considered were having the same expertise, being part of a superior research team, and possessing the necessary knowledge. The results also showed that no significant relationship was found between closeness centrality and the number of citations received by researchers. In this period, the betweenness centrality variable with a standard beta coefficient of 0.289 had a significant predictive power for the citation performance of researchers ($p > 0.000$). Therefore, it can be said that betweenness centrality measures influence the citation performance of researchers, and this measure plays a decisive role in the citation performance of researchers in the field of nuclear science and technology in this period. Occupying a central position in a co-authorship network, while providing strategic advantages in terms of proximity, does not guarantee a direct improvement in the researcher's performance. To draw a conclusive opinion on the relationship between betweenness centrality and citation performance, further research is needed. This research should explore whether bridging connections between all components in the network are necessary to examine the association between citation performance and betweenness centrality.

Conclusion: Based on the findings of the current study, it appears that prominent researchers in the field of endometriosis palliative care have not only demonstrated high productivity but have also played a significant role in shaping the co-authorship network within this field.

Keywords: Scientific relations, Iranian researchers, Palliative care, Endometriosis, Web of Science



A Review of the Role of Diet in Improving Endometriosis-Related Symptoms

Masoumeh Ghasemian, Maryam Mirzaabdollahi, Zahra Rastegari

Student Research Committee, Faculty of Nursing and Midwifery, Shiraz University of Medical Sciences, Shiraz, Iran

Abstract

Background: Endometriosis, a chronic inflammatory disease influenced by estrogen, impacts approximately 10-15% of women in their reproductive years. It is characterized by the abnormal growth of endometrial tissue outside the uterine cavity. The most common symptoms of endometriosis are infertility and chronic pelvic pain, which are experienced by about 71% of women. In addition to genetic factors, endometriosis is also related to environmental and lifestyle factors. The role of nutrition in the improvement of endometriosis is suggested due to the effect of diet on estrogen activity and the inflammatory process.

Methods: In this review, all relevant articles pertaining to the study's objective were thoroughly examined, covering the period from 2013 to 2023. A comprehensive search was conducted across various English databases, including Web of Science, Scopus, PubMed, Google Scholar, and Persian databases such as SID and Magiran.

Results: In the initial search, 17,996 articles were found, and after considering the inclusion and exclusion criteria, 15 articles were finally included in study. The study findings suggest that women with endometriosis can enhance their overall well-being and alleviate the severity of painful symptoms associated with the condition.

Conclusion: The results of this review study indicate that dietary modifications, such as reducing the intake of fat, particularly animal fats, decreasing the consumption of red meat, and increasing the consumption of fiber-rich foods like fruits and vegetables, have the potential to lower circulating estrogen levels. These dietary changes may be beneficial for women with endometriosis in managing their symptoms. Also, the reduction or elimination of gluten and soy led to the improvement of symptoms related to the disease. Given that diet modification is a prevalent self-management strategy used by individuals, and acknowledging the need for a comprehensive treatment approach in managing this disease, nutritional interventions aimed at reducing inflammation and alleviating troublesome symptoms may hold potential benefits in both prevention and treatment of endometriosis.

Keywords: Diet, Endometriosis, Symptom improvement



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Cesarean Scar Pregnancy (CSP): Incidence, Diagnosis, and Management

Maryam Ashrafi

Tehran University of Medical Sciences, Tehran, Iran

Abstract

Cesarean scar pregnancy (CSP) is a complication in which an early pregnancy implants within the scar tissue resulting from a previous cesarean delivery. Perhaps because of high worldwide cesarean delivery rates, there appears to be increased incidence and recognition of this condition over the past 2 decades. The clinical presentation of cesarean scar pregnancy (CSP) can vary, and it is not uncommon for many women to be asymptomatic when initially diagnosed. CSP can be difficult to diagnose in a timely fashion. Ultrasound imaging is the primary imaging modality for CSP diagnosis. Expectantly managed CSP is associated with high rates of severe maternal morbidity, including complications such as hemorrhage, placenta accreta spectrum (PAS), and uterine rupture. Given these substantial risks, pregnancy termination is recommended after CSP diagnosis. Several surgical and medical treatments have been described for this disorder; however, at this time, optimal management remains uncertain.

Keywords: Cesarean scar pregnancy, Hemorrhage, Placenta accrete spectrum, Ultrasound, Uterine rupture



Migration of Intrauterine Device to the Bladder in an Asymptomatic Woman: A Case Report

Seyedeh Azam Pourhoseini, Leili Hafizi, Mona Jafari

Department of Obstetrics and Gynecology, Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran

Abstract

The use of intrauterine device (IUD) as a form of contraception has increased in many countries. However, the use of IUD is not without potential complications including but not limited to uterine perforation and injury to adjacent organs. Instances of IUD misplacement within the bladder are exceedingly rare. In this study, a 41-year-old woman whose IUD was incidentally detected in her bladder during an ultrasound is explained. She was also asymptomatic. The IUD migrated from the normal location in the uterus to the bladder. The IUD was removed by cystoscopy without any complication. The occurrence of IUD misplacement in the bladder should be taken into consideration when the IUD string is not visible during an examination.

Keywords: Contraception, Intrauterine Device, Ultrasound, Uterine perforation



Hysteroscopic Polypectomy Without Cycle Cancellation in IVF/ICSI Cycles: A Cross-Sectional Study

Firouzeh Ghaffari ¹, Arezoo Arabipoor ¹, Narges Bagheri Lankarani ², Fatemeh Hosseini ¹, Akram Bahmanabadi ¹

1. Department of Endocrinology and Female Infertility, Reproductive Biomedicine Research Center, Royan Institute for Reproductive Biomedicine, ACECR, Tehran, Iran

2. Department of Epidemiology and Reproductive Health, Reproductive Epidemiology Research Center, Royan Institute for Reproductive Biomedicine, ACECR, Tehran, Iran

Abstract

Background: The purpose of the current study was to evaluate the effect of hysteroscopic polypectomy during ovarian stimulation phase on the outcomes of in vitro fertilization and/or intracytoplasmic sperm injection (IVF/ICSI) cycles.

Methods: This cross-sectional study was performed in female infertility department of Royan Institute from January 2011 to December 2013. A total of 160 patients who were incidentally diagnosed with polyp(s) measuring less than 20 mm during the stimulation phase for oocyte recoveries were included in the study. Among them, fifty-eight cases non-randomly underwent hysteroscopic polypectomy without cycle cancellation. Polyp resection was performed through hysteroscopic polypectomy during ovarian stimulation. The interval between polypectomy and embryo transfer (ET) was 3–17 days. The women who did not undergo hysteroscopic polypectomy and matched for polyp size were selected as the control group. The outcomes of IVF/ICSI cycles were compared between groups.

Results: The data analysis showed the two groups were comparable in terms of patients' characteristics and stimulation outcomes. The implantation rate was not significantly different between groups ($P = 0.3$). The clinical pregnancy and live birth rates were similar between groups (%34.9 vs. %32.5 and %30.2 vs. % 27.9, $P=0.9$ and $P=0.8$). No pregnancies were observed in patients who had an interval of less than 5 days between hysteroscopic polypectomy and embryo transfer (ET). The multivariable logistic regression analysis indicated that the interval between polyp resection and ET was a significant predictor for the live birth rate (odds ratio: 1.2, confidence interval: 1.01–1.5, $P = 0.04$).

Conclusion: For the management of the polyps less than 20 mm in size which have been diagnosed during the stimulation phase, the implementation of hysteroscopic polypectomy without cycle cancellation does not improve the pregnancy and live birth rates. Therefore, it seems that the continuation of the treatment cycle and ignorance of these polyps is the appropriate treatment choice and the implementation of hysteroscopic polypectomy and frozen embryo transfer program could be the next treatment option.

Keywords: Embryo transfer, Hysteroscopic polypectomy, Intracytoplasmic sperm injection, In vitro fertilization



The Role of Imaging in Endometriosis

Mahrooz Malek

Tehran University of Medical Sciences, Tehran, Iran

Abstract

Imaging plays a crucial role in the diagnosis and management of endometriosis. There are several imaging modalities that can be used to visualize the presence and extent of endometriosis lesions. The modalities include the following:

1. Transvaginal ultrasound (TVUS): This is a commonly used imaging technique for evaluating endometriosis. It involves inserting a probe into the vagina to obtain detailed images of the pelvic organs. TVUS can help identify endometriomas (cysts filled with endometrial tissue) and other pelvic abnormalities associated with endometriosis.
2. Magnetic resonance imaging (MRI): MRI provides detailed images of the pelvic organs and can help identify deep infiltrating endometriosis (DIE), which involves the invasion of endometrial tissue into the surrounding structures. MRI can also help evaluate the extent of disease involvement and aid in surgical planning.
3. Computed tomography (CT) scan: CT scans are less commonly used for endometriosis evaluation but may be helpful in certain cases, such as when there is suspicion of bowel involvement or other abdominal abnormalities.

Imaging is often used as a preoperative tool to guide surgical planning and to assess the extent of disease involvement. In this session, we will focus on discussing the imaging findings related to gastrointestinal (GI) and genitourinary (GU) involvement in endometriosis. We will explore the role of imaging techniques in diagnosing and evaluating these manifestations of endometriosis.

Keywords: Computed tomography, Deep infiltrating endometriosis, Magnetic resonance imaging, Transvaginal ultrasound



Fertility Preservation in Gynecologic Cancers

Setareh Akhavan

Gynecology Ward, Vali-E-Asr Hospital, Imam Khomeini Hospital Complex, Tehran University of Medical Sciences, Tehran, Iran

Abstract

Due to current social trends, childbearing is delayed nowadays. During the last decade, the percentage of patients who had a first pregnancy after 40 years was approximately 20%. In general, 8% of endometrial, 12% of ovarian, and 40% of cervical cancers occur in the childbearing years. In fact, treatment strategy must be optimized to guarantee tumor eradication and excellent clinical outcomes to preserve their chances to have children in the future. Fertility-sparing surgical strategies are feasible in the early stage of tumor development, but advanced diseases usually require a radical approach.

Most oncologic treatments can have detrimental effects on female reproductive potential, in particular those that involve chemotherapy with highly gonadotoxic agents or radiation therapy in areas encompassing ovaries, the uterus, and the vagina, potentially leading to compromised reproductive function. Abdominal and pelvic radiation therapy can accelerate oocyte atresia, resulting in premature ovarian aging, insufficiency, and dysfunction.

This is thought to occur in a dose-response relationship as oocytes are highly sensitive to ionizing radiation damaged by direct irradiation. Adjuvant chemotherapy is often used in the treatment of gynaecologic and non-gynaecologic malignancies. Chemotherapeutic agents have varying degrees of gonadotoxicity which can pose a risk of ovarian failure. Younger patients have a more robust ovarian reserve, which translates into a lower risk of chemotherapy-induced amenorrhea. Alkylating agents are associated with the highest risk for infertility and ovarian insufficiency, due to damage to the oocytes via single stranded DNA breaks.

In general, treatment planning should be approached through a multidisciplinary framework, considering comprehensive and precise knowledge of prognostic and predictive factors related to oncological outcomes, morbidity, and quality of life. Patients should be carefully counselled on the suggested treatment plan, and potential alternatives, including risks and benefits of all options. Clinicians should consider several factors when making decisions, including: 1) cancer stage, 2) patient's age, 3) fertility potential, 4) strong desire for childbearing, and 5) patient's compliance with follow-up protocols.

The surgical approach for fertility preservation includes the following strategies:

- Preservation of the uterus and at least one ovary is recommended in cases of borderline ovarian tumors, germ cell tumors, and early-stage epithelial ovarian cancer.
- For early stage cervical cancer, conization or trachelectomy can be considered as options to preserve fertility.
- Preservation of the ovaries is applicable for patients with endometrial or myometrial tumors, such as early-stage, low-grade endometrial cancer, certain low-grade early-stage endometrial stromal sarcomas, and early-stage leiomyosarcomas.

The medical approaches to fertility preservation include the following strategies: 1) fertility preservation in early-stage, low-grade endometrioid endometrial cancer can be achieved through hormone therapy, 2) the use of a GnRH (gonadotropin-releasing hormone) agonist is employed to protect the ovaries from the gonadotoxic effects of chemotherapy. Some clinicians advocate the use of GnRH agonists for fertility preservation. These agonists are typically administered starting one month before chemotherapy initiation, with dosages ranging from 3.75 mg monthly to 11.25 mg every three months. The recommended dosage is 3.75 mg monthly, as it allows for discontinuation in cases of drug intolerance or when fertility preservation is necessary. In cases where bilateral salpingo-oophorectomy is indicated, several fertility preservation options can be considered including embryo cryopreservation, oocyte cryopreservation, and ovarian tissue cryopreservation and transplantation. Ovarian transposition is recommended in certain cases where patients are candidates for pelvic irradiation.

Keywords: Fertility preservation, Gonadotoxicity, Gynaecologic cancer, Salpingo-oophorectomy



Management of Possible Complications of Endometriosis and Its Treatment by Laparoscopic Surgery

Maryam Nazari ¹, Ahmad Eshaghi Hassan Abadi ², Fatemeh Azad Shahraki ²

1. Nursing and Midwifery Sciences Development Research Center, Najafabad Branch, Islamic Azad University, Isfahan, Iran

2. Faculty of Nursing and Midwifery (FNM), Najafabad Branch, Islamic Azad University, Isfahan, Iran

Abstract

Background: Endometriosis is a chronic inflammatory disease that affects fertility. Surgical treatment for this disease often involves various procedures to address the underlying condition. These may include excision (ablation) of endometriotic tissue, the division of adhesions, and the removal of endometriosis cysts. Laparoscopic resection or ablation of endometriosis has been shown to be effective in managing complications in mild to moderate endometriosis. While laparoscopic surgeries offer numerous advantages over open surgeries, some patients may experience certain complications that can delay their discharge. These complications can include pain at the operation site, referred shoulder pain, as well as postoperative nausea and vomiting. Past research has indicated that the development of these complications does not stem from a single cause. Instead, they have been described as having multifactorial causes. The purpose of this study was to manage the possible complications of endometriosis and treat the disease with laparoscopic surgery.

Methods: This study serves as a comprehensive review of articles obtained from various reputable databases, including PubMed, ScienceDirect, SID, and Google Scholar. The search was conducted using specific keywords such as "endometriosis" and "laparoscopic surgery for women." By utilizing these databases and relevant search terms, a wide range of scholarly articles were identified and analyzed to provide a comprehensive overview of the topic at hand.

Results: Through a comprehensive review of clinical evidence spanning from 2000 to 2023, various treatment and diagnostic approaches for endometriosis have been identified. Diagnostic laparoscopy emerges as a valuable tool for diagnosing this condition. Additionally, two surgical methods, namely ablation and excision, have been recognized for their efficacy in managing endometriosis. Moreover, it has been identified that a combined approach involving surgery, medicine, and hormone therapy offers promising results in the management of endometriosis. In addition, to reduce complications following laparoscopic surgery, various intraoperative interventions and surgical techniques can be employed. These measures include optimizing the patient's position during surgery, utilizing sub-diaphragmatic intraperitoneal anesthesia or local intraperitoneal anesthesia, implementing incentive spirometry for postoperative respiratory support, aspirating and discharging CO₂ gas at the conclusion of the procedure, utilizing pulmonary retraction maneuvers, and employing drug interventions and combined methods to minimize pain, nausea, vomiting, and other complications associated with laparoscopic surgery.

Conclusion: The ongoing utilization of minimally invasive methods for the diagnosis and treatment of endometriosis highlights the continuous efforts to improve patient outcomes. By carefully considering each patient's condition and employing a range of techniques, it is possible to minimize the side effects associated with these methods and maximize their benefits. The aim is to optimize the use of minimally invasive approaches to ensure their effectiveness and enhance patient well-being.

Keywords: Clinical evidence, Endometriosis, Laparoscopy, Minimally invasive methods



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The Role of Inflammation, Oxidative Stress, Angiogenesis, and Apoptosis in the Pathophysiology of Endometriosis: Basic Science and New Insights Based on Gene Expression

Mansooreh Samimi ¹, Mohammad Hossein Pourhanifeh ², Abolfazl Mehdizadehkashi ¹, Tahereh Eftekhari ³, Zatoollah Asemi ²

1. Endometriosis Research Center, Iran University of Medical Sciences, Tehran, Iran

2. Research Center for Biochemistry and Nutrition in Metabolic Diseases, Kashan University of Medical Sciences, Kashan, Iran

3. Reproductive Health Research Center, Tehran University of Medical Sciences, Tehran, Iran

Abstract

Endometriosis is a frequent and chronic illness in young women which could be defined by the existence of endometrial stroma and glands outside usual location of the uterine lining which has painful symptoms. The advanced stage of endometriosis may lead to gynecological malignancies, such as ovarian cancer, and other complications, including infertility. However, its exact physiopathology is not well known. Recent studies have shown the possible roles of inflammation along with oxidative stress. Additionally, angiogenesis and apoptosis dysregulation contribute to endometriosis pathophysiology. Therapeutic strategies and continuing attempts to conquer endometriosis should be done regarding molecular signaling pathways. Thus, the present review summarizes current studies and focuses on molecular mechanisms.

Keywords: Angiogenesis, Apoptosis, Endometriosis, Inflammation, Oxidative stress



The Effect of Different Doses of Estrogen on the Prevention of Adhesion Recurrence After Hysteroscopic Lysis in Cases with Asherman's Syndrome: A Clinical Trial

Leili Hafizi, Golrokh Sherafati, Mona Jafari

Supporting of the Family and the Youth of Population Research Core, Department of Obstetrics and Gynecology, Faculty of Medicine, Mashhad University of Medical Sciences, Mashhad, Iran

Abstract

Background: The objective of this study was to compare the effect of two different doses of estrogen (2.5 mg and 5 mg daily) in preventing the recurrence of adhesions after hysteroscopic lysis in cases with Asherman's syndrome.

Methods: In this randomized controlled clinical trial, patients with moderate and severe Asherman's syndrome were investigated at Imam Reza Hospital of Mashhad between 2016 and 2015. The patients underwent hysteroscopy for the removal of adhesions, followed by intrauterine balloon insertion for all patients. Subsequently, they received 30 days of estrogen therapy along with 10 mg of medroxyprogesterone daily during the last 10 days. Patients were randomly assigned to two groups of estrogen 2.5 mg and 5 mg daily. Following the completion of the treatment period, a subsequent hysteroscopy was performed to assess the condition of the uterine cavity and compare the treatment response between the two groups in terms of adhesion recurrence and its severity. A significance level of $p > 0.05$ was used to evaluate the results.

Results: In this research, 30 women were compared. In general, 20 individuals were in the 2.5 mg group and 10 individuals were in the 5 mg estrogen group. The average age of the patients was 33.40 years. In the 2.5 mg group, curettage was identified as the most common cause of Asherman's syndrome (60%), while in the 5 mg group, other surgeries accounted for the majority (60%). The two groups had no statistically significant differences in terms of confounding variables including age, cause of Asherman's syndrome, and severity of adhesions. Upon analyzing the treatment response, no statistically significant difference was found between the two groups in terms of adhesion intensity during repeated hysteroscopy ($P = 0.858$) and response to treatment ($P = 0.714$).

Conclusion: Based on the findings of this study, it can be concluded that for the prevention of intrauterine adhesion recurrence (Asherman's syndrome) following hysteroscopic adhesion lysis, a dosage of 2.5 mg of conjugated estrogen was equally effective as a dosage of 5 mg.

Keywords: Adhesions, Asherman's syndrome, Hysteroscopy, Uterine adhesions, Uterine cyst



Massive Bleeding During Resection of Uterine Scar Following Caesarean Section with Ectopic Pregnancy Associated with Placental Ingrowth

Kambiz Sadegi ¹, D. Fallahi ², A. Poodineh ³, Mania Kaveh ²

1. Department of Anesthesiology, Zabol University of Medical Sciences, Zabol, Iran

2. Department of Gynecology and Obstetrics, Zabol University of Medical Sciences, Zabol, Iran

3. Department of Nursing, Faculty of Paramedical Sciences, Zabol Medical Science University, Zabol, Iran

Abstract

Potential complications related to pregnancy in the uterine scar after a cesarean section are associated with significant maternal morbidity, particularly if not promptly recognized. These complications may include uterine rupture, severe hemorrhage, and the potential need for emergent hysterectomy, although the exact prevalence of these complications is not well established. Based on the available evidence, pregnancy in a uterine scar following a cesarean section and variants of placental ingrowth are regarded as the same condition. It is recognized that the risks of complications increase as the gestational age advances. In this study, two cases from our hospital were presented involving different gestational ages, both diagnosed and treated for placental ingrowth. Placental ingrowth can pose a significant complication in subsequent pregnancies. When the embryo implants in the scar area, it may lead to the formation of a diverticulum or defect in the lower uterine segment. It is important to note that even after the removal of the fetus from the scar area, the recovery of the uterine wall does not guarantee complete healing or a favorable pregnancy outcome. Women who are considering pregnancy and have a history of fetal egg retention in the uterine scar area should seek consultation and close monitoring at a level III hospital once pregnancy occurs.

Keywords: Caesarean section, Placenta ingrowth, Placenta variants, Pregnancy



Bioinformatics and Endometriosis, A Review

Niloofar Agharezaee^{1,2}

1. Department of BioInformatics, Kish International Campus, University of Tehran, Kish, Iran

2. Monoclonal Antibody Research Center, Avicenna Research Institute (ACECR), Tehran, Iran

Abstract

Background: Endometriosis is a long-term condition that can cause severe pelvic pain and is estimated to affect 6%–10% of women in their childbearing years. It is a multifactorial disease for which the pathogenesis is currently unclear. Knowledge of the pathophysiology at the cellular and molecular level is limited, and there is no clear treatment for this disease. Therefore, bioinformatics analysis is required to better understand the molecular pathogenesis, genetic, metabolic, and environmental factors related to endometriosis.

Methods: In this review study, previously published papers were collected from 2017 to 2023 using electronic sources in reliable databases such as Scopus, PubMed, ISI, Google Scholar, and Science Direct.

Results: The potential of personalized medicines, which may incorporate sophisticated decision-making algorithms, content mining, neural networks, and other technologies, is highly advantageous. These advancements have the capability to integrate various sources of data, including genomics, transcriptomics, epigenomics, proteomics, microbiome information, exposure data, behavioral patterns, informatics, and clinical records, throughout a patient's entire lifetime. In this regard, some research suggests that certain microRNAs may play a role in turning endometriosis into ovarian cancer. Such research uses bioinformatics to study how these microRNAs interact with genes. Thus, it is necessary to explore potential biomarkers and underlying molecular mechanisms for endometriosis diagnosis and therapies.

Conclusion: Since the unique molecular subtyping of endometriosis and its characteristic genes contribute to early diagnosis and intervention in the disease, the idea of a roadmap for endometriosis research that integrates artificial intelligence and omics as ways to achieve a better understanding of physiopathological features and better-tailored effective treatments is currently an optimal method.

Keywords: Artificial intelligence, Bioinformatics, Endometriosis, Genetics



Comparative Effectiveness of Kelly Plication Combined with Local Injection of Autologous Platelet-Rich Plasma (PRP) Versus Kelly Plication in Women with Stress Urinary Incontinence: A Randomized Clinical Trial

Maryam Hajihashemi, Fahimeh Valadi, Minoo Movahedi

Isfahan University of Medical Sciences, Isfahan, Iran

Abstract

Background: Stress Urinary Incontinence (SUI) is characterized by the involuntary loss of urine that occurs during physical exertion or activities, as reported by the individual. Although SUI does not risk the patient's life, it seriously impacts their quality of life (QoL). Anterior repair (AR), Kelly plication, and urethral sling are surgical treatments in patients with urinary incontinence who do not respond to conservative treatments. Another treatment is the use of platelet-rich plasma (PRP) which has been used in treating and restoring skin, periodontal, and nerve lesions and has shown its effectiveness. The purpose of the current study was to assess the efficacy of using Kelly plication and Kelly plication plus PRP as treatments for women suffering from stress urinary incontinence.

Methods: In this randomized clinical trial, a total of 60 women diagnosed with stress urinary incontinence (SUI) were randomly assigned into two groups using random block randomization. The first group consisted of 30 patients who underwent Kelly plication, while the second group of 30 patients received both PRP injection at the anterior vaginal wall, specifically targeting the mid-urethral area, and Kelly plication. To assess symptom severity, self-reported questionnaires were administered at various time points, including pre-treatment, as well as at 1, 3, and 6 months post-treatment. In addition, Urogenital Distress Inventory (UDI-6) questionnaire and International Consultation on Incontinence Questionnaire-Short Form (ICIQ-SF) were used to evaluate and compare the effectiveness of the two treatment procedures.

Results: Among the 60 patients enrolled, the median age was 48.5 (range 27-72) years. There was no statistical difference between the two treatment groups by age (p -value=0.772). UDI-6 and ICIQ-SF scores showed incontinence improvement within both treatment groups during 1, 3, and 6 months post-treatment. However, a statistically significant difference was observed between the two treatment groups when assessing symptom severity using the UDI-6 questionnaire (p -value=0.012). Moreover, no significant difference was found between the groups when using the ICIQ-SF questionnaire (p -value=0.112). The current study demonstrated that PRP effectively treated women with SUI six months after treatment. The outcome is evidenced by multiple self-reported questionnaires administered before the treatment, as well as 1, 3, and 6 months post-treatment. Injecting bulking agents to provide mechanical support to the urethral is not new in treating SUI. Autologous platelet-rich plasma (A-PRP) is considered a superior agent compared to previously employed substances such as paraffin, bovine collagen, polydimethylsiloxane, polyacrylamide gel, and hyaluronic acids. This is due to its autologous nature and minimal, if any, allergic reactions. PRP is not only biocompatible, durable, and non-migratory, but it also possesses reparative properties which can repair damaged ligaments and potentially prolong treatment effectiveness.

Conclusion: The local injection of platelet-rich plasma seems to be a safe intervention, demonstrating a reasonably satisfactory response in the treatment of female stress incontinence (SUI) at 1, 3, and 6 months post-treatment. However, the duration of the treatment effect and its sustainability remain, necessitating further studies to provide more insights.

Keywords: Autologous platelet-rich plasma, Female stress incontinence, Kelly plication, Urogenital distress inventory



Investigation on the Correlation of Endometriosis with Breast Cancer

Fatemeh Roshani ¹, Mehdi Haghi ²

1. Tabriz University of Medical Sciences, Tabriz, Iran

2. Department of Biology, School of Natural Sciences, Tabriz University of Medical Sciences, Tabriz, Iran

Abstract

Background: Endometriosis, endometrial and breast cancers are amongst the most prevalent diseases in females complicating health as well as reproductive ability. Endometriosis is a common disease that is developed by the growth of endometrium-like tissues out the uterus and mostly in pelvic region. Tissues of uterus and breast show similar response to hormones. Both healthy endometrium and endometriosis tissues respond similarly to hormones. Although endometriosis is a benign female disease, its growth pattern resembles malignant diseases.

Methods: The current investigation is a review study, through which the association of endometriosis and manifestation of breast cancer and dependence of endometriosis to estrogen was evaluated via searching literature in biomedical science databases like NCBI and PubMed. The searches through databases were conducted using keywords including endometriosis, breast cancer, endometrial cancer, and estrogen.

Results: Endometriosis is pathophysiologically known as an estrogen-dependent disease, similar to breast and endometrial cancers. Results from relevant articles show that the risk of development of breast and endometrial cancer considerably increases in endometriosis patients. Endometriosis tissue can significantly proliferate through binding to peritoneum and implanting there, which can lead to invasion to other tissues and neighboring organs including bladder and rectum. Assessment of association between endometriosis and breast and endometrial cancer revealed that the initiation of these cancers can remarkably be elevated in females with endometriosis.

Conclusion: Through evaluating the increasing rate of endometrial and breast cancer in endometriosis patients, it can be concluded that this disease can promote the risk of breast and endometrial cancer in these patients. Therefore, they should be aware of their predisposing factors and follow regular screening and genetic tests to prevent such cancers.

Keywords: Breast cancer, Endometrial cancer, Endometriosis, Estrogen



Proteomic and Bioinformatic Analysis of Differentially Expressed Proteins in Cases with Polycystic Ovary Syndrome and Their Association with Endometriosis

Ahmad Fazilat¹, Kambiz Gilany², Keyvan Majidzadeh¹

1. Cancer Genetics Department, Motamed Cancer Institute (MCI), Tehran, Iran

2. Avicenna Research Institute, ACECR, Tehran, Iran

Abstract

Background: The association between differentially expressed proteins, physiology, and pathogenicity of endometriosis has been investigated in various studies. Due to their involvement in other relevant conditions such as PCOS and endometrial cancer, the differentially expressed proteins in endometriosis are increasingly utilized as specific diagnostic biomarkers and for personalized medicine. The number of these biomarkers is continually growing as more advancements are made.

Methods: In the current study, the expression level of total proteome of serum samples obtained from PCOS patients was investigated through nano LC-MS/MS technique, which was followed by in-silico bioinformatic analysis through DAVID, STRING, PANTHERDB softwares.

Results: Among 220 detected proteins, differential expression of 42 proteins was found to be significant. Among these, 19 proteins were upregulated and 23 proteins were downregulated. Bioinformatic analysis characterized the protein interaction network of differentially expressed proteins and revealed that down-expression of AHSG, PLG, and ICAM in PCOS cases is correlated with endometriosis. Moreover, through analysis of molecular association of proteins in terms of their co-expression and co-localization within involved molecular pathways in endometriosis and PCOS cases, it was demonstrated that plasminogen and AHSG as hub molecules showed the highest number of interactions. This suggests that PCOS patients who downregulate these proteins have a higher risk of developing endometriosis.

Conclusion: It was concluded that AHSG, PLG, and ICAM1, which were found to be downregulated, play a role in molecular mechanisms underlying endometriosis manifestation. These proteins can be considered as potential endometriosis-associated biomarkers in PCOS patients.

Keywords: Bioinformatics, Biomarker, Endometriosis, PCOS, Proteomics