EuropeAnatolia Health Sciences Journal E-ISSN: 2980-3861

REVIEW ARTICLE
Volume:3 Issue:1 Year:2025 https://doi.org/10.5281/zenodo.15236848

The Utilization Of Hysteroscopy In Clinical Practice - A Narrative Review

Histeroskopinin Klinik Pratikte Kullanımı - Derleme Makalesi

Ahmet Coşkan[1]

[1]Private Gölcük Medar Hospital

ABSTRACT

Hysteroscopy is an endoscopic method used to evaluate the uterine cavity. It is a minimally invasive diagnosis and surgical management of endocervical and intrauterine pathologies and the gold standard in assessing and managing intrauterine pathologies. Hysteroscopy provides patient-doctor comfort, making it easier to apply. It is preferred because it can provide patient satisfaction, rapid recovery of the patient, and cost-effectiveness.
Hysteroscopy is ideal for patients with abnormal findings in tests such as hysterosalpingography and saline infusion sonography. Suspicion of an intracavitary lesion is one of them. It is also possible to intervene in polyps and myomas that may cause abnormal uterine bleeding. Submucosal and some intramural fibroids can be treated. Hysteroscopy can be performed for reasons such as abnormal endometrial thickness and postmenopausal bleeding. It is crucial to be able to treat abnormal uterine bleeding without the need for a hysterectomy. Myomectomy, polypectomy, and septoplasty can be performed hysteroscopically. Adhesiolysis can also be performed this way. It is also a suitable method for patients evaluated for infertility. On the other hand, it removes products of conception and intrauterine foreign bodies, and intrauterine devices remain in the cavity.
Hysteroscopy can also help evaluate those with abnormal or echo-like findings on imaging and those with chronic dense leukorrhea. It is an auxiliary tool in pregnancy complications and the treatment of persistent bleeding after pregnancy. This review aims to elucidate hysteroscopy's clinical utilization, indications, and complications to help physicians improve their techniques.

Keywords: Hysteroscopy, Minimally İnvasive, Endometrium, Myomectomy, Polypectomy.

ÖZET

Histeroskopi, uterus boşluğunu değerlendirmek için kullanılan endoskopik bir yöntemdir. Endoservikal ve intrauterin patolojilerin minimal invaziv tanısı ve cerrahi tedavisidir ve intrauterin patolojilerin değerlendirilmesinde ve yönetiminde altın standarttır. Histeroskopi, hasta-doktor konforu sağlayarak uygulanmasını kolaylaştırır. Hasta memnuniyeti, hastanın hızlı iyileşmesi ve maliyet etkinliği sağlayabilmesi nedeniyle tercih edilir.
Histeroskopi, histerosalpingografi ve salin infüzyon sonografisi gibi testlerde anormal bulgular olan hastalar için idealdir. İntrakaviter lezyon şüphesi bunlardan biridir. Anormal uterin kanamaya neden olabilecek polip ve miyomlara da müdahale etmek mümkündür. Submukozal ve bazı intramural miyomlar tedavi edilebilir. Anormal endometrial kalınlık ve postmenopozal kanama gibi nedenlerle histeroskopi yapılabilir. Histerektomiye gerek kalmadan anormal uterin kanamayı tedavi edebilmek çok önemlidir. Miyomektomi, polipektomi ve septoplasti histeroskopik olarak yapılabilir. Bu şekilde adezyolizis de yapılabilir. Kısırlık açısından değerlendirilen hastalar için de uygun bir yöntemdir. Öte yandan, gebe kalma ürünlerini ve rahim içi yabancı cisimleri çıkarır ve rahim içi cihazlar boşlukta kalır.
Histeroskopi ayrıca görüntülemede anormal veya eko benzeri bulguları olanların ve kronik yoğun lökoresi olanların değerlendirilmesine yardımcı olabilir. Gebelik komplikasyonlarında ve gebelikten sonra devam eden kanamanın tedavisinde yardımcı bir araçtır. Bu derleme, histeroskopinin klinik kullanımını, endikasyonlarını ve komplikasyonlarını açıklığa kavuşturarak hekimlerin tekniklerini geliştirmelerine yardımcı olmayı amaçlamaktadır.

Anahtar Kelimeler: Histeroskopi, Minimal invaziv, Endometrium, Miyomektomi, Polipektomi.

INTRODUCTION

Hysteroscopy is the standard diagnostic and therapeutic method for endometrial pathologies. Patient selection for this procedure is usually based on the results of preoperative ultrasonography scans. Hysteroscopy performs procedures such as polyp and myoma resection, synechiolysis, sterilization, septum resection, and removal of residual pregnancy products. In addition to being an organ-preserving surgery, its most significant advantage is that it is a minimally invasive procedure. Diagnostic

Corresponding Author: Ahmet Coşkan, e-mail: drahmetcoskan@gmail.com
Received: 20.01.2025, Accepted: 11.03.2025, Published Online: 20.04.2025
Cited: Coşkan A. The Utilization Of Hysteroscopy In Clinical Practice - A Narrative Review. Europeanatolia Health Sciences Journal. 2025;3(1):34-42. https://doi.org/10.5281/zenodo.15236848

hysteroscopic procedures have very low complication rates. It is safe in the evaluation of intrauterine pathologies. However, operative hysteroscopy procedures are riskier (1).

Hysteroscopy is an endoscopic method used to evaluate the uterine cavity. It is a minimally invasive diagnosis and surgical management of endocervical and intrauterine pathologies and the gold standard in assessing and managing intrauterine pathologies. Patient selection is essential in the application of hysteroscopy. It also requires access to hysteroscopic instruments (1, 2).

Hysteroscopy is very useful for the evaluation of the uterine cavity. There are many approaches for women with abnormal uterine bleeding or intrauterine lesions, such as pelvic sonography, endometrial sampling, and hysterosalpingography. The risk of missing focal pathologies in blind endometrial sampling and dilatation curettage procedures is eliminated in hysteroscopy. The abnormal uterine bleeding causes are listed as polyp, adenomyosis, leiomyoma, malignancy, coagulopathy, ovulatory dysfunction, endometrial, and iatrogenic (3). In addition, hysteroscopy can be used to evaluate and treat lesions observed in normal endometrial echo on transvaginal ultrasonography and identified through imaging methods such as saline infusion sonography or magnetic resonance imaging (MRI) evaluation. In addition, it helps prove that there is no pathology in those with persistent symptoms and standard diagnostic tests. Another advantage is that it minimizes financial and logistic problems in diagnosis and treatment planning (2, 4).

Hysteroscopy provides patient-doctor comfort, making it easier to apply. The reasons for preference are that it can provide patient satisfaction, rapid recovery of the patient, and cost-effectiveness. Hysteroscopy cannot evaluate deep myometrial disease (e.g., adenomyosis), tubal pathology, or external uterine contour. Therefore, it is unsuitable to examine these anatomical structures in infertility evaluation. Hysteroscopy may cause difficulties due to the patient and disease, the doctor or the surgical team, and the environment. There is difficulty in managing major intrauterine pathologies. Patient anxiety can also be a problem, especially in terms of performing office hysteroscopy (5). This review aims to elucidate hysteroscopy's clinical utilization, indications, and complications to help physicians improve their techniques.

INDICATIONS of HYSTEROSCOPY

As mentioned above, hysteroscopy evaluates and treats the endometrial cavity, tubal ostium, and endocervical canal. There are many indications for hysteroscopy. Hysteroscopy is ideal for patients with abnormal findings in tests such as hysterosalpingography and saline infusion sonography. Suspicion of an intracavitary lesion is one of them. It is also possible to intervene in polyps and myomas that may cause abnormal uterine bleeding. Submucosal and some intramural fibroids can be treated (6). Hysteroscopy can be performed for reasons such as abnormal endometrial thickness and postmenopausal bleeding. It is crucial to be able to treat abnormal uterine bleeding without the need for a hysterectomy. Myomectomy, polypectomy, and septoplasty can be performed hysteroscopically. Adhesiolysis can also be performed this way. It is also a suitable method for patients evaluated for infertility. On the other hand, it removes products of conception and intrauterine foreign bodies, and intrauterine devices remain in the cavity (6, 7) (Figure 1).

Hysteroscopy can also help evaluate those with abnormal or echo-like findings on imaging and those with chronic dense leukorrhea. It is an auxiliary tool in pregnancy complications and the treatment of persistent bleeding after pregnancy. It is valuable in the evaluation of endocervical lesions and for vaginoscopy purposes. It is used in preoperative planning and postoperative or postprocedural follow-up. Many conditions that are considered to affect reproductive functions in patients who desire pregnancy can be diagnosed with hysteroscopy. These include adenomyosis, endometrial polyps, endometrial hyperplasia, endometrial cancer, endometritis, intrauterine synechia, hysterotomy isthmocele, leiomyoma, Müllerian anomalies, remaining products of conception and tubal occlusion.6 Gland-like openings are observed in superficial adenomyosis (7) (Figure 2).

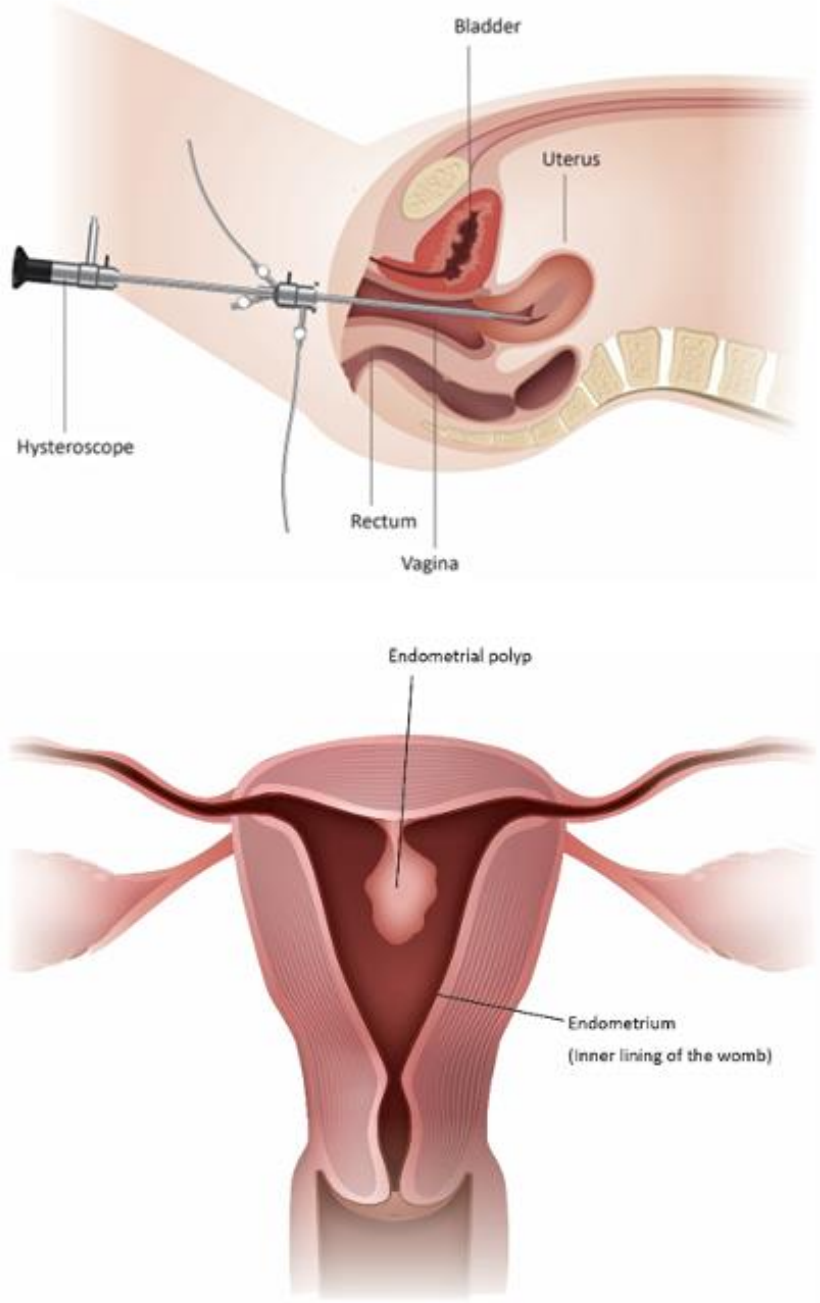

Figure 1. Outpatient hysterectomy (OPH) procedure. This is done by passing a thin telescope-like device that is fitted with a tiny camera through the cervix (21).

Figure 2. Section of cervical synechiae

Hysteroscopic septotomy can be applied to patients with congenital müllerian anomalies, such as uterine septum. It is also a reliable method in patients with intrauterine synechiae who are being evaluated for Asherman Syndrome. There are cases where hysteroscopic repair is preferred after patient-specific evaluations in isthmocele instances, which have become more familiar with the increase in the number of cesarean sections (8). The place of hysteroscopy in endometrial cancer is controversial. Although it is known that MRI is better for cervical evaluation, hysteroscopic tumor resection is also thought to be helpful (9). It has been stated that suspicion of endometrial cancer is not a contraindication and can be used in evaluation in case of suspicion. It is also considered a successful method in cervical adenocarcinoma (10) (Figure 3).

Figure 3. Detection of endometrial carcinoma via hysteroscopy

CONTRAINDICATIONS of HYSTEROSCOPY

Attention should be paid to the situations where hysteroscopy should not be performed. Hysteroscopy should not be performed on patients with active pelvic infection or patients known to have prodromal or active genital herpes. Hysteroscopy is not considered appropriate in pregnant patients except for cases requiring the removal of intrauterine devices and conception products. It is not performed in the presence of pyometra. It is not suitable for patients with medical comorbidities such as coronary heart disease and bleeding diathesis. Known cervical cancer can be considered a contraindication. Moderate vaginal bleeding can be regarded as a relative contraindication (11).

PREOPERATIVE EVALUATION and PREPARATION

To perform operative hysteroscopy, an anesthesiologist or authorized anesthesia technician, nurses to provide pre-and post-operative care, a nurse and technician to provide the operating room and instruments during the operation, and a team to assist the surgeon are required. The team must prepare

the operation's hysteroscope, operative instruments, and distension medium. An anesthesiologist is not required since intervention can be performed with or without local anesthesia. Effective communication within the team is essential in all hysteroscopy applications.

Essential issues in pre-surgical planning exist. Evaluation steps should not be skipped. Each patient's anamnesis, physical examination, beta-CG value in the premenopausal period, and any special conditions must be taken into account. The timing should be determined on a patient-specific basis. While the timing of surgery does not matter in postmenopausal women, it is preferred not to perform it in the secretory period in premenopausal women, as endometrial polyps may be overdiagnosed during this period (12).

Informed consent must be obtained. Misoprostol application for cervical preparation is not a routine recommendation. However, current sources recommend 200 to 400 mcg of misoprostol orally or vaginally the night before the procedure. Prophylactic antibiotics are not required (13). Premedication is not necessary for pain management. Current data do not support that premedication with nonsteroidal anti-inflammatory drugs reduces intraoperative pain. It can be used to reduce postoperative pain. In office hysteroscopy applications, pain management should be handled differently (14, 15).

PROCEDURE

Position

The patient is prepared in the dorsal lithotomy position. Care is taken to ensure that there is no unnecessary pressure and that it does not cause nerve damage. The table should be in a flat position. The Trendelenburg position is avoided. A bimanual examination is performed. There is no need for a permanent catheter. The bladder is emptied with a flat catheter before the procedure (16).

Equipment

Hysteroscopic instruments are installed. Camera settings are adjusted to ensure good focus and white balance and that the access tract is intact. Viewing angles can range from 0 to 70. A smaller angle can produce a more panoramic image.

Vaginoscopic Access Technique

In office hysteroscopy, no instruments are required for the vaginoscopic access technique. Vaginal distension is provided, and the posterior fornix is monitored. It is the preferred technique. It is comparable to the traditional access technique in reducing pain during and after the procedure.

Distension Medium Selection

After the rigid and flexible hysteroscope is inserted into the cervical canal, a distension medium monitors the endometrial cavity. The distension medium is selected according to the energy type. If a monopolar is to be used, electrolyte-rich fluid is not used because it spreads the energy outside the surgical field. Better visualization and less pain are observed with normal saline. Since it is isotonic, it is suitable for bipolar electrocautery. The limit for the fluid deficit in hypotonic fluid use is 1000 mL; for isotonic fluid, it is 2500 mL. In elderly patients and patients with comorbidities, 750 mL for hypotonic fluid and 1500 mL for isotonic fluid is recommended. Since fluid overload complications may be encountered, great care should be taken (16).

Traditional Entry Technique

In the traditional entry technique, first, a speculum is inserted, and the cervix is seen. It is held with a tenaculum, and cervical dilatation is provided. Then, the hysteroscope is inserted. During this time, the uterus is flattened with the traction of the tenaculum.

Evaluation of the Endocervix, Uterine Cavity, and Tubal Ostia

With the hysteroscope entering the cavity, pathologies inside the uterus are quickly visualized. An operation plan is made. Tubal ostia should be seen in the evaluation. An Operative Hysteroscopy is applied if a surgical intervention is to be performed. It can benefit from a resectoscope, tissue removal tools, and operative instruments. There are positive developments in terms of office hysteroscopy. Smaller diameter hysteroscopes and operative systems with improved techniques have been developed. These systems have been accepted in the evaluation and treatment of intrauterine pathology.

If a vasovagal reaction develops, the procedure is terminated. The patient is placed supine, with the feet raised or the Trendelenburg position adopted. IV fluid is administered. Some patients may need to be given atropine or have salt, such as aromatic ammonium, smelled (17).

HYSTEROSCOPIC SURGERY

Hysteroscopic Polypectomy

If a polyp is detected during the ultrasonographic evaluation of the uterus, the most uncomplicated and most modern treatment is possible with hysteroscopy. Polyps are structures that can be defined as “pieces of flesh” originating from the endometrium, narrowing the space inside the uterus and causing an increase in menstrual bleeding. They can be removed in cases that are thought to reduce the chance of pregnancy. In addition, since there is a possibility of cancer in 1% of polyps, surgical removal, and pathology evaluation is recommended (18).

Hysteroscopic Myomectomy

Myomas are benign tumors originating from the myometrium. Submucous myomas (located in the inner layer of the uterus) or intramural (originating in the middle layer of the uterus) and press on the inner layer of the uterus can cause excessive menstrual bleeding, anemia, infertility, and an increase in the risk of abortion and premature birth. For these reasons, a hysteroscopic myomectomy can be planned (19).

Hysteroscopic Asherman Operation / Synechia Opening (Adhesiolysis)

Adhesions may occur in the inner layer of the uterus after previous myoma operations, postpartum curettage, cesarean section, and tuberculosis infection. Conditions such as menstrual bleeding being less than usual or not at all can be seen in these patients. Severe pain can also be observed during menstruation. The inability to conceive and abortion can also be seen in these patients. Hysteroscopic adhesiolysis is planned for treatment in patients applying for infertility (20).

Hysteroscopic Septum Resection

The uterine septum is a congenital uterine disorder that divides the uterine cavity into two parts, called a “curtain.” The septum can be short or extended to the cervix, or it can even be observed as extending to the entrance of the vagina by dividing both the cervix and the vagina in two. It can prevent pregnancy because it reduces the volume of the cavity. In the case of pregnancy, the possibility of abortion and premature birth is high. Some cases are asymptomatic, can give birth at term, and are thought not to require treatment. Hysteroscopic septum resection is recommended for patients with a history of abortion or premature birth who apply for infertility and who will be followed for IVF. Septums can cause bleeding outside of menstrual periods and severe pain (dysmenorrhea) during menstruation. In this case, surgery is also considered. Congenital anomalies in the urinary system should be regarded as uterine anomalies (21).

Operative Difficulties

During the operative procedure, cervical stenosis, uterine malposition, difficult uterine distension, and obstructive bleeding are among the difficulties that may be encountered.

Postoperative Care

Most patients can tolerate hysteroscopy. Vaginal spotting and discomfort are frequently encountered. The recommended pelvic rest period is variable. For the return to normal activities, especially physicians who use the vaginoscopy technique may recommend 24 hours. For the pathology result to be evaluated with the patient, a follow-up appointment should be planned before the patient is discharged (19).

COMPLICATIONS

Complications that may be seen during and after operative hysteroscopy can be summarized as complications related to distension medium, mechanical accidents, bleeding, anesthesia complications, laser and electrical damage, infection, and gas embolism. Caution should be exercised regarding cervical laceration, uterine perforation, and possible spread of malignant endometrial cells, which are among the mechanical complications (17).

The most common complication of both office and operative hysteroscopy is uterine perforation. If there is hemodynamic stability and the suspicion of vascular damage is low, it does not require laparoscopy or exploratory laparotomy. Long-term follow-up is provided after surgery. Close clinical follow-up is provided for pain, bleeding, and fever. This complication is frequently encountered in removing type 1 and 2 submucous fibroids with operative hysteroscopy. Bleeding can be managed with electrocautery. Uterotonics such as oxytocin can be used. A Foley catheter can be placed in the uterus for tamponade (18).

Observation and antibiotic treatment are preferred in fundal perforation. In case of perforation of the myometrium with scissors and endometrial biopsy forceps, bowel-rectum damage may occur. “False passage” can be created in anterior or posterior uterine wall perforation. Preoperative bimanual examination and unknown uterine position can prevent these situations. Transabdominal ultrasonography during cervical dilatation may be helpful. Anterior wall perforation may cause bladder damage, and posterior wall damage may cause rectum and bowel damage. Uterine serosa perforation requires diagnostic laparoscopy. In cases of intrauterine myomectomy and difficult endometrial resection, ureteral damage may be seen in posterior and lateral perforations. In this case, laparoscopy and urology consultation are recommended. In cases of lateral uterine wall perforation, damage to the iliac vessels, mesenteric artery, aorta, and presacral vessels, broad ligament hematomas, and significant hemorrhage may be seen. Regarding electrical and laser energy, the bladder, ureters, bowel and vessels may also be affected. In these cases, complete blood count and fever and monitoring of vascular damage findings are essential. Laparotomy may be required (19).

The second most common complication during and after the procedure is bleeding. It is observed in 2.5 out of every 1.000 cases. Preoperative evaluation of patients with heavy bleeding or intramural myoma should include hemoglobin or hematocrit measurement. Oral contraceptives and GnRHa can be considered to reduce bleeding. A wire loop, rollerball, or roller barrel (with 40w-60w coagulation) can usually stop bleeding during surgery. If bleeding continues, a Foley catheter is placed in the uterus and inflated with 20-30 mL saline. It can be extended from 2 to 24 hours, according to the physician's evaluation. 20 U Vasopressin in 20 mL normal saline can be injected into the cervix. If this is not helpful, rectal Misoprostol (Prostaglandin E1) can be applied to provide uterine contraction tone, or the uterus can be packed with vasopressin-impregnated gauze. In resistant bleeding, uterine artery embolization can be performed by interventional radiologists. In case of failure of all methods, the management is hysterectomy (20).

Fluid overload due to distension fluid is another possible complication. The fluid deficit should be measured well during the operation, and attention should be paid to the amount of fluid added to the circulation. Especially in the use of hypotonic solutions that do not contain electrolytes, the risk of hyponatremia and the possibility that this may lead to cerebral edema are emphasized. This condition is defined as Operative Hysteroscopy Intravascular Absorption Syndrome (OHIAS). OHIAS can be prevented by close monitoring of the administered fluid. Patients at risk of OHIA can be predicted

following the expected procedure time, the risk of incomplete resection of intrauterine pathology, and the presence of comorbidities (18).

Infection is an uncommon but serious morbidity-associated complication. Uncomplicated cystitis, endometritis, and parametritis can be seen. Fatal toxic shock has been described after endometrial resection. Broad ligament abscess, tubo-ovarian abscess, and pyometria have also been seen. Inadequate aseptic technique, prolonged operative time, repeated insertion and removal of the hysteroscope from the cervix, extensive intrauterine dissection, previous pelvic inflammatory disease, and in-utero tissue fragments increase the risk of postoperative infection. Prophylactic antibiotics should be administered to patients at risk of endocarditis. Some hysteroscopists use prophylactic antibiotics and laminaria. Postoperative cystitis/endometritis treatment is standard. Abscesses should be excluded with pelvic ultrasound in endometritis and free fluid in the peritoneal cavity if laparoscopy is not performed, with abdominal evaluation. Blood cultures should be obtained, and broad-spectrum antibiotics should be administered. Curettage is generally avoided to avoid increasing bacteremia and causing Asherman's (17).

CONCLUSION

Hysteroscopy is the gold standard method in diagnosing and managing intrauterine pathologies. It provides minimally invasive diagnosis and surgical management of endocervical and intrauterine pathologies. Intrauterine pathologies are known to affect pregnancy outcomes. Technological developments offer opportunities for better diagnosis and treatment. Rapid recovery monitoring is a reliable and cost-effective method that obtains satisfactory results for the physician and the patient. The pioneering of reproductive endocrinology and infertility specialists in minimally invasive reproductive surgery will benefit patients in optimizing fertilization.

DESCRIPTIONS

Funding

There is no specific funding related to this research.

AI Statement

The authors used AI and AI-assisted Technologies (Grammarly and MS Word Editor) in the writing process. These technologies improved the readability and language of the work but did not replace key authoring tasks such as producing scientific or medical insights, drawing scientific conclusions, or providing clinical recommendations. The authors are ultimately responsible and accountable for the contents of the whole work.

Competing interests

The authors declare that they have no competing interests.

Consent for Publication

The original article is not under consideration by another publication, and its substance, tables, or figures have not been published previously and will only be published elsewhere.

Data Availability

The data supporting this study's findings are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

Ethical Declaration

As this was a narrative review article, no Ethics committee approval was required. Additionally, as no patient was enrolled, no informed consent was obtained.

REFERENCES

1. Moore JF, Carugno J. Hysteroscopy. In: StatPearls. Treasure Island (FL): StatPearls Publishing; July 18, 2023.

2. De Silva PM, Smith PP, Cooper NAM, Clark TJ; Royal College of Obstetricians and Gynaecologists. Outpatient Hysteroscopy: (Green-top Guideline no. 59). BJOG. 2024;131(13):e86-e110. doi:10.1111/1471-0528.17907

3. Moawad NS, Carugno J, Bradley LD. Is the Art of Hysteroscopy in Jeopardy? A Wake-Up Call. J Minim Invasive Gynecol. 2024;31(4):261-262. doi:10.1016/j.jmig.2024.02.006

4. Bilir E, Kacperczyk-Bartnik J, Bizzarri N, Kahramanoğlu İ. Current practice with operative hysteroscopy for fertility preservation in endometrial cancer and endometrial premalignancies. Arch Gynecol Obstet. 2024;309(6):2267-2278. doi:10.1007/s00404-024-07463-9

5. Bilir E, Kacperczyk-Bartnik J, Bizzarri N, Kahramanoğlu İ. Current practice with operative hysteroscopy for fertility preservation in endometrial cancer and endometrial premalignancies. Arch Gynecol Obstet. 2024;309(6):2267-2278. doi:10.1007/s00404-024-07463-9

6. Parry JP, Isaacson KB. Hysteroscopy and why macroscopic uterine factors matter for fertility. Fertil Steril. 2019;112(2):203-210. doi:10.1016/j.fertnstert.2019.06.031

7. Bacskó G. Uterine surgery by operative hysteroscopy. Eur J Obstet Gynecol Reprod Biol. 1997;71(2):219-222. doi:10.1016/s0301-2115(96)02639-5

8. Dreisler E, Kjer JJ. Asherman's syndrome: current perspectives on diagnosis and management. Int J Womens Health. 2019;11:191-198. Published 2019 Mar 20. doi:10.2147/IJWH.S165474

9. Török P, Molnár S, Lampé R, Jakab A. The use of hysteroscopy in endometrial cancer: old questions and novel challenges. Climacteric. 2020;23(4):330-335. doi:10.1080/13697137.2020.1732914

10. Köchli OR, Wallwiener D, Brandner P, Bratschi HU, Bronz L, Burmucic R,et al. Consensus of diagnostic and operative hysteroscopy. Consensus statements of a joint-meeting of the Societies for Gynecological Endoscopy of Switzerland, Germany and Austria, October 1999. Contrib Gynecol Obstet. 2000;20:182-187. doi:10.1159/000060279

11. Orlando MS, Bradley LD. Implementation of Office Hysteroscopy for the Evaluation and Treatment of Intrauterine Pathology. Obstet Gynecol. 2022;140(3):499-513. doi:10.1097/AOG.0000000000004898.

12. Shields J, Lupo A, Walsh T, Kho K. Preoperative evaluation for gynecologic surgery: a guide to judicious, evidence-based testing. Curr Opin Obstet Gynecol. 2018;30(4):252-259. doi:10.1097/GCO.0000000000000472

13. ACOG Practice Bulletin No. 195: Prevention of Infection After Gynecologic Procedures. Obstet Gynecol. 2018 Jun;131(6):e172-e189.

14. Ahmad G, Saluja S, O'Flynn H, Sorrentino A, Leach D, Watson A. Pain relief for outpatient hysteroscopy. Cochrane Database Syst Rev. 2017;(10)(10):CD007710. Published 2017 Oct 5. doi:10.1002/14651858.CD007710.pub3

15. Vitale SG, Alonso Pacheco L, Haimovich S, Riemma G, De Angelis MC, Carugno J et al. Pain management for in-office hysteroscopy. A practical decalogue for the operator. J Gynecol Obstet Hum Reprod. 2021;50(1):101976. doi:10.1016/j.jogoh.2020.101976.

16. Moore JF, Carugno J. Hysteroscopy. [Updated 2023 Jul 18]. In: StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2025 Jan-. Available from: https://www.ncbi.nlm.nih.gov/books/NBK564345/

17. Cooper JM, Brady RM. Intraoperative and early postoperative complications of operative hysteroscopy. Obstet Gynecol Clin North Am. 2000 Jun;27(2):347-66. doi: 10.1016/s0889-8545(00)80026-1. PMID: 10857125.

18. Favilli A, Mazzon I, Zorzato PC, Uccella S, Gerli S. OHIA syndrome: Stop before it is too late! Taiwan J Obstet Gynecol. 2021 Mar;60(2):385-386. doi: 10.1016/j.tjog.2021.01.027. PMID: 33678354.

19. Cooper JM, Brady RM. Intraoperative and early postoperative complications of operative hysteroscopy. Obstet Gynecol Clin North Am. 2000 Jun;27(2):347-66. doi: 10.1016/s0889-8545(00)80026-1. PMID: 10857125.

20. Cooper JM, Brady RM. Intraoperative and early postoperative complications of operative hysteroscopy. Obstet Gynecol Clin North Am. 2000 Jun;27(2):347-66. doi: 10.1016/s0889-8545(00)80026-1. PMID: 10857125.

21. Salazar CA, Isaacson KB. Office Operative Hysteroscopy: An Update. J Minim Invasive Gynecol. 2018 Feb;25(2):199-208. doi: 10.1016/j.jmig.2017.08.009. Epub 2017 Aug 10. PMID: 28803811.