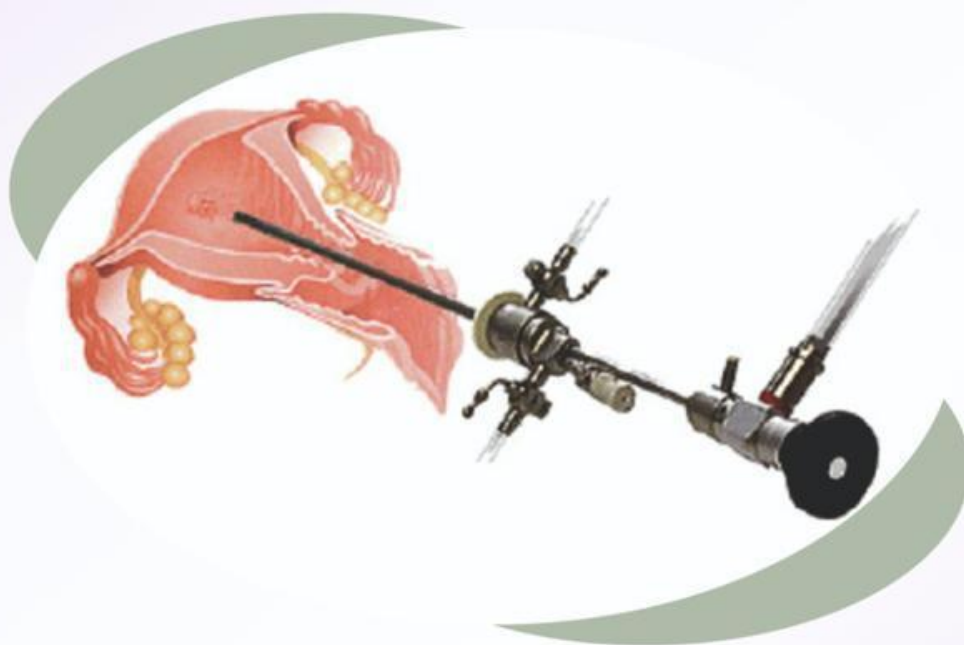




# KSOGA UPDATE

ENDOSCOPIC COMMITTEE

AUGUST 2023



**ENDOEXCELLENCE :**  
**NUANCES OF SAFE HYSTEROSCOPY**



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Hon Secretary,  
Endoscopic Committee

**EDITORIAL****Dr Vidya Bhat**

It is my great pleasure and privilege to write this editorial message for the 1st news bulletin which is being released after a gap of 6 years.

I thank Dr. M G Hiremath and Dr. Vidya Thobbi for encouraging the Endoscopy committee to release this news bulletin. I also thank Dr Rajashree Palladi and Dr. Suman Gaddi for their support. My sincere thanks to Team KCOG, Dr Hema Divakar, Dr Muralidhar Pai and Dr Sajjan for their support and encouragement. I feel grateful to Dr Nagraj H and Dr Kasturi Donimath who have constantly supported us. Last but not the least, my sincere thanks to Dr. Ravikanth the Endoscopy Committee chair person for shouldering the responsibility of this bulletin and constantly working toward upliftment of Endoscopy Committee.

It was a real challenge to decide the topic for this news bulletin as everything is now available on the Internet. There are many conferences and webinars which are flooded in a month to all the delegates and postgraduate students. When we thought of this news bulletin and had a meeting we decided that it should be something, which the surgeon can refer and read even in their OPD. Thus, the thought of guidelines came to our minds and we decided to go ahead with the guidelines for Hysteroscopic surgeries and its outcomes.

We all know that though Hysteroscopic surgeries are very important in Gynec practice

the amount of importance given to it is less. Many have inhibitions in learning and doing Hysteroscopic surgeries as the complications are portrayed in large magnitudes. Actually in reality it is not so. When the guidelines and indications are followed properly the complication rate is considerably less.

In this news letter we have compiled all the guidelines necessary for Hysteroscopic surgeries and it is our humble attempt to make Hysteroscopy popular and safe.

I extend my heartfelt thanks to all the Doctors who have contributed for this bulletin.

As the secretary of KCOG I am constantly working towards the skill development and enhancement of our KSOGA members which in-turn will improve the quality care towards our patients in Karnataka. Long live KSOGA and KCOG

Regards  
**Dr Vidya Bhat**



## PRESIDENTIAL ADDRESS



**Dr. Vidya Thobbi**  
President,  
Karnataka State Obstetrics and  
Gynaecologists Association

Dear Esteemed Colleagues and Members of the Karnataka State Obstetrics and Gynaecologists Association Endoscopic Committee,

I am extending my warm greetings to all of you. It is indeed a privilege to address this incredible community of professionals in the field of Obstetrics and Gynaecology. As we release this news bulletin covering guidelines on Hysteroscopy, I'd like to share a few thoughts.

We stand at a pivotal moment in the evolution of Obstetrics and Gynaecology. Endoscopy, specifically Hysteroscopy, has become an extraordinarily powerful tool in our armoury, enabling us to diagnose and treat various intrauterine conditions effectively. But with great power comes great responsibility, hence the need for established guidelines to uphold the safety, ethical, and practical aspects of this procedure.

The following guidelines aren't just a collection of best practices; they symbolize our concerted efforts, experience, and wisdom as a medical community. They provide a compass to navigate the complex world of Hysteroscopy and ensure the delivery of high-quality care to our patients while prioritizing their safety and well-being.

As we move forward, it remains incumbent upon us to persistently refine and update these guidelines based on emerging evidence, technological advancements, and our own experiences. This approach ensures progressive learning and the continued upliftment of our healthcare standards. Unity, knowledge sharing, continual learning, and clinical excellence should remain our constant affirmations.

I want to express my deep appreciation to everyone involved in crafting these guidelines. Also, I want to thank each one of you for your devotion to providing the best care possible to the women we serve and for your ongoing commitment to professional growth and development.

I invite you all to read this bulletin, discuss it among peers, implement the guidelines in your practice, and provide feedback for future editions. Together, let's strive towards a healthier, safer future for women and ensure the Karnataka State Obstetrics and Gynaecologists Association continues to blaze trails in our admirable field.

Warm regards,

**Dr. Vidya Thobbi**

President,

Karnataka State Obstetrics and Gynaecologists Association





## GENERAL SECRETARY ADDRESS



**Dr. Rajshree Paladi**  
Honorary Secretary  
KSOGA 2023-2025

Dear members of the Endoscopic Committee,

Warm greetings and best wishes to all of you!

I am delighted to announce the forthcoming release of the maiden news bulletin by the Endoscopy Committee of KSOGA 2023-2025. This commendable endeavor aims to compile and report on valuable cases and meaningful scenarios in a structured manner, facilitating the learning and teaching experiences for all involved.

On behalf of the organization, I extend my heartfelt wishes for a successful tenure to the Endoscopy Committee. May your efforts in documenting and sharing valuable knowledge contribute greatly to the growth and advancement of the field.

Once again, congratulations on this significant achievement!

Best regards,

**Dr. Rajshree Paladi**  
Honorary Secretary  
KSOGA 2023-2025





## CHAIRPERSON'S ADDRESS



**Dr Ravikanth G O**  
Chairperson, Endoscopic Committee,  
Karnataka State Obstetrics and  
Gynaecologists Association

### Endoscopic Committee

Karnataka State Obstetrics and Gynaecologists Association.

It gives me immense pleasure to address you as the Chairperson of this esteemed committee. Today I proudly present to you our Maiden news bulletin, focusing on guidelines for Hysteroscopy.

This exemplary news bulletin represents a collaborative effort that has been given life through the relentless support and inspiration provided by respected figures Dr. Vidya Thobbi Madam, Dr. M.G. Hiremath Sir, Dr Rajahree Paladi madam and Dr. Vidya Bhat Madam.

A result of their collective encouragement and perspicacious guidance, this project reflects not just output, but the amalgamation of enduring expertise, mentorship and sheer dedication they have constantly offered. We sincerely acknowledge their influences that have made this initiative possible.

In pursuit of knowledge and advancement, their names shall remain etched as pillars of inspiration that enabled the fruition of this invaluable news bulletin. Their legacy of fostering growth and learning continues, and this bulletin serves as a testament to that cause. Together, we march forward on this journey of enlightenment.

As pioneers in the field of Obstetrics and Gynaecology, we constantly face dynamic challenges that push our boundaries and expand our knowledge. The incorporation of Hysteroscopy into our practice has undeniably been a game-changer, providing us critical insights into intrauterine diagnosis and treatment.

The issuance of these robust guidelines is a testament to our commitment to ensuring the effective and safe use of this revolutionary procedure. The guidelines reflect our collective wisdom and experience and are aimed at standardizing practices, improving patient outcomes, and promoting the skilful use of Hysteroscopy across our fraternity.

Highlighting the importance of uphold integrity in medicine is paramount, and these guidelines reflect exactly that. They ensure that application of the procedure complies with a high ethical standard, delivering safe, effective, and comprehensive care to every woman we serve.

As we continue to stride forward, let us remember that medicine is an ever-evolving field. It is essential that we embrace an attitude of constant learning and adaptability. These guidelines will be refined and updated to reflect new scientific evidence, emerging technology, and our experiential insights.

I wish to extend my heartiest gratitude to everyone who contributed their time, knowledge, and experience in the creation of these guidelines. Furthermore, I would like to appreciate the tireless dedication you all show towards elevating the standard of care we provide to our patients.

I implore you to familiarize yourselves with these guidelines, adopt them into your daily practice, discuss them with your colleagues, and offer your invaluable feedback to enrich future editions.

May we, as the Karnataka State Obstetrics and Gynaecologists Association, Endoscopic Committee, further strengthen our commitment towards the betterment of women's health. With our collective efforts and dedication, our association will continue pioneering advancements in our field of expertise.

With warm regards,  
**Dr Ravikanth G O**

Chairperson, Endoscopic Committee, Karnataka State Obstetrics and Gynaecologists Association

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## **LIVE ENDOSCOPIC SURGERY WORKSHOP AT DAVANGERE**

**The workshop 20/05/2023 has benefitted to  
120 Delegates with enthusiastic interaction  
from many budding Gynecologists.**





## GURUKUL SKILL TRANSFER WORKSHOP AT BANGALORE



Gurukul skill transfer workshop at Bangalore on 18/06/2023 has trained 100 delegates at Hotel Asok





***A CME on Advancements in  
surgical management of  
Endometriosis  
Organised by Mangaluru  
Obstetrics & Gynecology  
society (MOGS) in association  
with KSOGA Endoscopic  
committee.***

***It was ably organised by Dr  
Aruna Kamath President MOGS  
& Dr Swapna Brijesh Secretary  
MOGS***

***It was also accompanied by  
felicitation Sister Jessy and  
Sister Seeta for their Long  
service on Motherhood***

**“ A good surgeon  
doesn't just concentrate on technical ability,  
but also on the appropriateness of what he/she is doing. ”**

**GUIDELINES FOR HYSTEROSCOPIC MYOMECTOMY :  
INTERNATIONAL SOCIETY OF  
GYNAECOLOGICAL ENDOSCOPY**

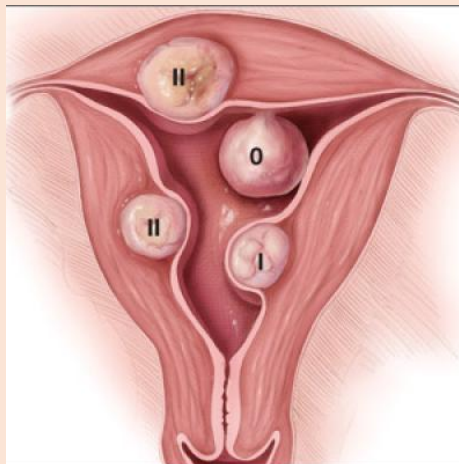
**Dr Vidya V Bhat, Dr Leela Sravanthi Veeradhi.  
Radhakrishna Multispeciality Hospital, Bengaluru,  
Secretary KCOG.**



Hysteroscopic Myomectomy is the most effective minimally invasive surgical procedure done for Submucosal fibroids (i.e; FIGO type 0,1,2)

Type 0 : Pedunculated intracavitary, Type 1 : <50% intramural,

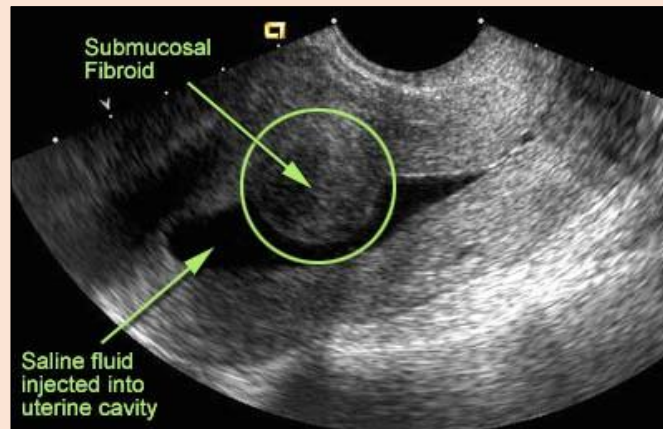
Type 2 : >50% intramural



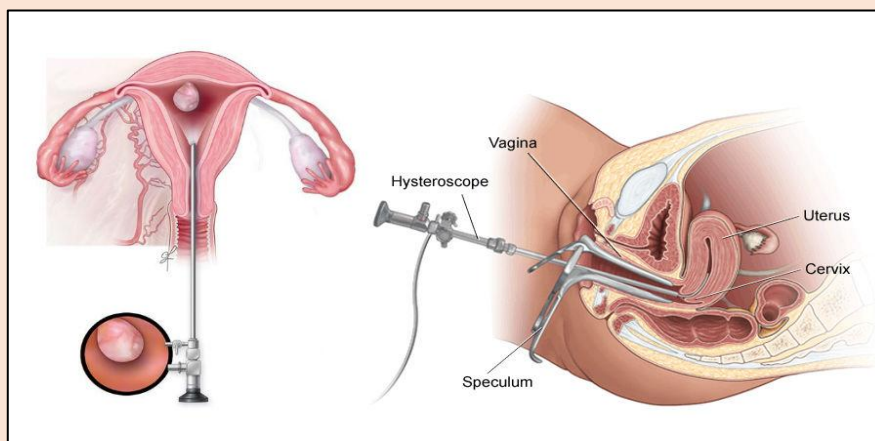
Following are a list of recommendations of the ISGE to help provide clinicians information about preoperative evaluations, best surgical techniques, intraoperative measures and postoperative surgical outcomes while doing hysteroscopic myomectomy.

**Recommendation 1:** The preoperative evaluation of patients planned to be submitted to HM should start with detailed history and physical examination (Grade 1A).

**Recommendation 2:** Ultrasonographic examination should be offered to all patients with uterine LMs (Grade 1A) while MUSA terms, definitions and measurements are recommended to be used for the description of scanning and sonographic findings (Grade 1B).



**Recommendation 3:** For planning HM, evaluation of the uterus with SIS or combined assessment by TVUS and diagnostic hysteroscopy is recommended (Grade 1A). MRI evaluation is appropriate when ultrasound-based assessment faces its limitations (e.g., patients with high body-mass-index, numerous LMs, very enlarged uterine size, coexistence of LMs and other uterine/pelvic lesions and uncertain nature of the uterine tumor) (Grade 1A).



**Recommendation 4:** Proper informed consent has to be given to the patient explaining alternative therapeutic strategies, the potential risks of HM, eventual need for a second intervention, and the likelihood of LM recurrence (Grade 1A).



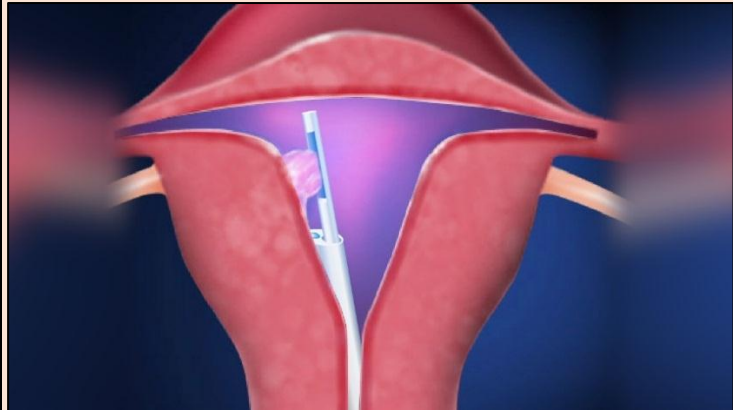
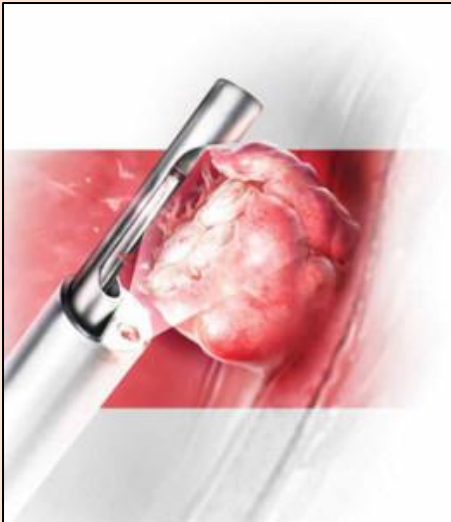
**Recommendation 5:** The use of STEPW submucosal LM classification system is recommended to predict the complex surgeries, incomplete removal of the LM, long operative time, fluid overload and other major complications (grade 1B).

	Size (cm)	Topography	Extension of the base	Penetration	Lateral Wall	Total
0	> 2 to 5	Low	$\leq 1/3$	0	<b>+ 1</b>	
1	> 2 to 5	Middle	>1/3 to 2/3	$\leq 50\%$		
2	> 5	Upper	> 2/3	> 50%		
Score	+	+	+	+	+	

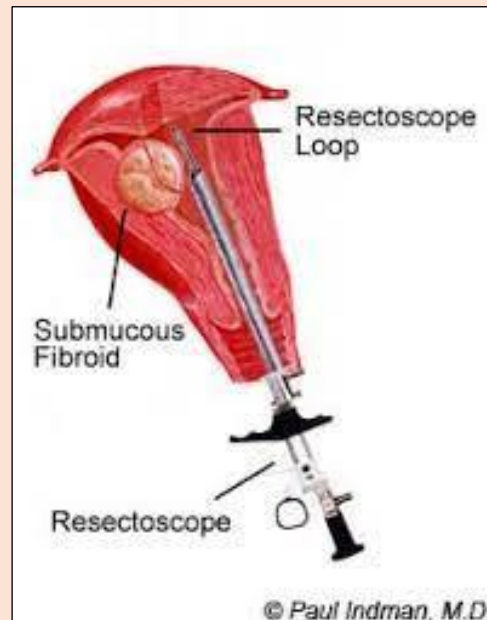
Score	Group	Complexity and therapeutic options
0 to 4	I	Low complexity hysteroscopic myomectomy.
5 to 6	II	High complexity hysteroscopic myomectomy. Consider GnRH use? Consider Two-step hysteroscopic myomectomy.
7 to 9	III	Consider alternatives to the hysteroscopic technique

**Recommendation 6:** The preoperative treatment with GnRH analogues is not routinely recommended because it has not been proved to be useful to facilitate a complete resection of submucous LM, reduce operative time and fluid absorption, and avoid major complications (grade 2B).

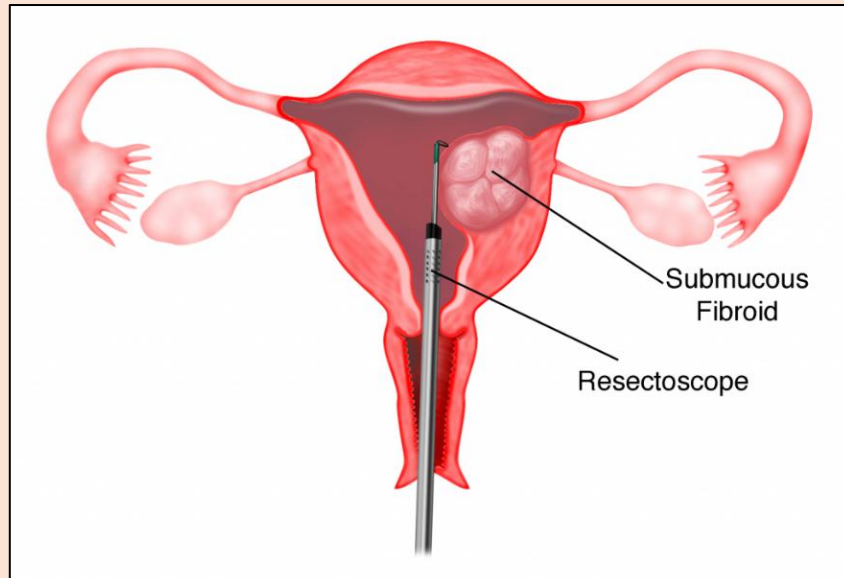
**Recommendation 7:** For type 0 LMs, in addition to resectoscopy (slicing technique), morcellation is recommended, being faster and having a shorter learning curve with respect to resectoscopy(grade 1)



**Recommendation 8 :** For type 1–2 LMs, slicing technique is recommended at this moment in time, being feasible and reproducible with respect to morcellation alone (grade 1C).



**Recommendation 9 :** No recommendation can be advanced concerning cold and thermal loop myomectomy for type 1–2 LMs (grade 2C).



**Recommendation 10:** Monopolar compared to bipolar type 1–2 LM resection is equivalent in terms of menstrual symptom relief and reproductive outcome (grade 2B).

**Recommendation 11:** The use of vaginal misoprostol prior to HM is not routinely recommended in order to reduce cervical trauma and perforation (grade 2B).

**Recommendation 12:** A fluid deficit of 1000 mL also in case of bipolar myomectomy with saline solution, in healthy women of reproductive age, contains low risk for major complications. Deficits of 1000 mL–2500 mL using saline solution need careful monitoring and termination of surgery at the slightest sign of possible embolism. Deficits of over 2500 mL need immediate termination of surgery (grade 1C).

**Recommendation 13:** Lower thresholds (750 mL) for fluid deficit should be considered in the elderly and in women with cardiovascular, renal or other co-morbidities (Grade 1B).

**Recommendation 14:** Routine hyaluronic acid gel application is recommended after HM, particularly in case of multiple myomectomies (Grade 1B).



## **GUIDELINES FOR MANAGEMENT OF ASHERMAN SYNDROME**



**Dr. Sunil Eshwar.**

**Lead consultant Aster RV hospital and Aikya fertility and research center**

Intrauterine adhesions (IUA) were first described by Heinrich Fritsch in 1894 in a patient who developed secondary amenorrhea after a postpartum curettage. In 1948, Joseph Asherman of the Hadassah Hospital of Tel Aviv published the first article on the pathology of this condition which he named 'Amenorrhoea Traumatica'. The terms "Asherman syndrome" and IUAs are often used interchangeably, although the syndrome requires the constellation of signs and symptoms (in this case, pain, menstrual disturbance, and subfertility in any combination) related to the presence of IUAs. The presence of IUAs in the absence of symptoms may be best referred to as asymptomatic IUAs and are of questionable clinical significance.

In cases where intrauterine adhesions (IUA) are found accidentally without any symptoms one should avoid the term AS and instead apply the term "asymptomatic intrauterine adhesions."

Intrauterine adhesions can be either primary after pregnancy-related curettage, alternatively after hysteroscopic surgery, or secondary when re-occurring after adhesiolysis has been performed.

### **Diagnosis**

Hysterosalpingography(HSG)- Historically, the diagnosis of AS was primarily made using radiographic techniques such as HSG. The findings suggestive of AS on HSG are as follows:

- Marginal or centrally located intrauterine filling defects/ -Partial obliteration of the uterine cavity

- Complete distortion of the uterine cavity /-Absence of contrast filling inside the uterine cavity (due to lower uterine cavity obliteration)

The sensitivity of HSG is 75% in the detection of IUAs while its positive predictive value (PPV) is 50%.

Ultrasound-IUAs appear as dense echoes within the endometrial cavity with an irregular, thin endometrium. USG is especially useful in women with dense lower uterine cavity adhesions where the role of HSG is limited. The sensitivity and specificity of transvaginal USG are 52% and 11%, respectively. Currently, 3D USG is also used to detect IUAs with a specificity of 45%

Sonohysterography (SHG) - combines the advantages of both HSG and USG. The visualization of echogenic areas within the saline-filled cavity denotes the presence of IUAs. The sensitivity of SHG has been reported to be 75% and PPV of 42.9%, which is comparable to that of HSG

MRI - Magnetic resonance imaging (MRI) is another noninvasive imaging modality that can be used in cases of suspected AS. its role in routine clinical practice remains limited because of its high cost

Hysteroscopy - Hysteroscopy is currently the gold standard diagnostic and therapeutic modality for the diagnosis of AS allowing the accurate diagnosis and treatment in only one intervention.

### **Guidelines for diagnosis of intrauterine adhesions**

1. Hysteroscopy is the most accurate method for diagnosis of IUAs and should be the investigation of choice when available. Level B.
2. If hysteroscopy is not available, HSG and SHG are reasonable alternatives. Level B.

3. Magnetic resonance imaging should not be used for diagnosis of IUAs outside of clinical research studies. Level C

### **Classification of intrauterine adhesions -**

Many different classifications have been used to create uniformity of the reporting of and for evaluating the prognosis

March in 1978- Adhesions classified as minimal, moderate, or severe based on hysteroscopic assessment of the degree of uterine cavity involvement.

Hamou - Adhesions classified as isthmic, marginal, central, or severe according to hysteroscopic assessment.

Valle and Sciarra - Adhesions classified as mild, moderate, or severe according to hysteroscopic assessment and extent of occlusion (partial or total) at HSG.

European Society for Hysteroscopy -Complex system classifies IUAs as grades I through IV with several subtypes and incorporates a combination of hysteroscopic and HSG findings and clinical symptoms.

American Fertility Society - Complex scored system of mild, moderate, or severe IUAs based on extent of endometrial cavity obliteration, appearance of adhesions, and patient menstrual characteristics based on hysteroscopic or HSG assessment.

Donnez and Nisolle - Adhesions classified into six grades on the basis of location, with postoperative pregnancy rate the primary driver. Hysteroscopy or HSG are used for assessment.

Nasr et al - Complex system creates a prognostic score by incorporating menstrual and obstetric history with IUA findings at hysteroscopic assessment

American Fertility Society (AFS) classification.



In 1988, the AFS introduced a comprehensive classification system that became the most widely accepted IUAs classification system across the globe. It included the clinical symptoms (menstrual pattern) as an indicator of disease severity, which was considered important as it gives an estimate about the amount of endometrium which was available for potential regeneration post-adhesiolysis and serves as an important marker for defining the prognosis post-treatment, thus helping in pre-treatment patient counselling

	Characteristics		
Extent of cavity involved	<1/3 1	<1/3–2/3 2	>2/3 4
Type of adhesions	Flimsy 1	Filmy and Dense 2	Dense 4
Menstrual pattern	Normal 0	Decreased 2	Amenorrhoea 4
Prognostic classification		HSG score	Hysteroscopy score
Stage I (Mild)	1–4		
Stage II (Moderate)	5–8		
Stage III (Severe)	9–12		

Nasr classification -very comprehensive scoring system including the clinical symptoms (both menstrual pattern and reproductive outcomes) of the patients and the hysteroscopic findings along with providing a prognostic correlation. This system gives greater emphasis on the type of adhesions and the ability to visualize the tubal ostium over the involvement of the rest of the endometrial cavity. Adhesions were pathologically classified into three categories: filmy/dense/tubular. The latter, which is the most severe form of the disease, indicates dense adhesions obliterating the entire uterine cavity, thereby obscuring both the tubal ostia. Isthmic fibrosis was identified as a separate entity and was given special importance as it could initiate a neuroendocrine reflex

and cause endometrial deactivation and amenorrhea even when the rest of the cavity is free of adhesions

		Score
<i>Hysteroscopic findings</i>		
Isthmic fibrosis		2
Filmy adhesions	Few	1
	Excessive (i.e., >50%, of the cavity)	2
Dense adhesions	Single band	2
	Multiple bands (i.e., >50% of the cavity)	4
Tubal ostium	Both visualized	0
	Only one visualized	2
	Both not visualized	4
Tubular cavity (sound less than 6)		10
<i>Menstrual pattern</i>		
Normal		0
Hypomenorrhea		4
Amenorrhea		8
<i>Reproductive performance</i>		
Good obstetric history		0
Recurrent pregnancy loss		2
Infertility		4
0–4 = Mild (good prognosis); 5–10 = moderate (fair prognosis); 11–22 = severe (poor prognosis).		

**Guidelines for classification of intrauterine adhesions**

1. Intrauterine adhesions should be classified as prognosis is correlated with severity of adhesions. Level B.
2. The various classification systems make comparison between studies difficult to interpret. This may reflect inherent deficiencies in each of the classification systems. Consequently, it is currently not possible to endorse any specific system. Level C

**Guidelines for primary prevention of intrauterine adhesions**

1. The risk for de novo adhesions during hysteroscopic surgery is impacted by the type of procedure performed with those confined to the endometrium (polypectomy) having the lowest risk and those entering the myometrium or involving opposing surfaces a higher risk. Level B
2. The method of pathology removal may impact the risk of de novo adhesions. The risk appears to be greater when electrosurgery is used in the nongravid uterus and for blind versus vision-guided removal in the gravid uterus. Level C
3. The application of an adhesion barrier following surgery that may lead to endometrial damage significantly reduces the development of IUAs in the short term, although limited fertility data are available following this intervention. Level A

**Management of intrauterine adhesions**

As IUAs are not life-threatening, treatment should be considered only when there are signs or symptoms of pain, infertility, recurrent pregnancy loss, or menstrual abnormalities including hematometra. The primary objective of any intervention is to restore the normal volume and shape of



the endometrial cavity and cervical canal and to facilitate communication between the cavity and both the cervical canal and fallopian tubes. This will allow both normal menstrual flow and adequate sperm transportation for fertilization and implantation to occur.

### **Guidelines for the surgical management of intrauterine adhesions**

1. Hysteroscopic lysis of adhesions by direct vision and a tool for adhesiolysis is the recommended approach for symptomatic IUAs. Level B
2. There is no evidence to support the use of blind cervical probing. Level C.
3. There is no evidence to support the use of blind dilation and curettage. Level C.
4. For women with IUAs who do not wish any intervention but still want to conceive, expectant management may result in subsequent pregnancy; however, the time interval may be prolonged. Level C.
5. Adjunctive interventions to aid adhesiolysis include ultrasound, fluoroscopy, and laparoscopy. There are no data to suggest that these prevent perforation or improve surgical outcomes and are likely dependent on clinical skills and availability. However, when such an approach is used in appropriately selected patients, it may minimize the consequences if perforation occurs. Level B
6. In the presence of extensive or dense adhesions, treatment should be performed by an expert hysteroscopist familiar with at least one of the methods described. Level C

### **Guidelines for secondary prevention of intrauterine adhesions**

1. The use of an IUD, stent, or catheter appears to reduce the rate of postoperative adhesion reformation. There are limited data regarding subsequent fertility outcomes when these barriers are used. Grade A

2. The risk of infection appears to be minimal when a solid barrier is used compared with no treatment. *Grade A*
3. There is no evidence to support or refute the use of preoperative, intraoperative, or postoperative antibiotic therapy in surgical treatment of IUAs. *Grade C*
4. If an IUD is used postoperatively, it should be inert and have a large surface area such as a Lippes loop. Intrauterine devices that contain progestin or copper should not be used after surgical division of IUAs. *Grade C*
5. Semi-solid barriers such as hyaluronic acid and auto-cross-linked hyaluronic acid gel reduce adhesion reformation. At this time, their effect on post-treatment pregnancy rates is unknown. *Grade A*
6. Following hysteroscopic-directed adhesiolysis, postoperative hormone treatment using estrogen, with or without progestin, may reduce recurrence of IUAs. *Grade B*
7. The role of medications designed as adjuvants to improve vascular flow to the endometrium has not been established. Consequently, they should not be used outside of rigorous research protocols. *Grade C*
8. Stem cell treatment may ultimately provide an effective adjuvant approach to the treatment of Asherman syndrome; however, evidence is very limited and this treatment should not be offered outside of rigorous research protocols. *Grade C*

### **Guidelines for postoperative assessment after treatment of intrauterine adhesions**

1. Follow-up assessment of the uterine cavity after treatment of IUAs is recommended, preferably with hysteroscopy. *Grade B*

## HYSTEROSCOPIC REMOVAL OF INTRAUTERINE DEVICE (IUD)



**Dr. Madhu K N,**

**Assoc. Professor, Dept. of OBG, JJM Medical college,  
Davangere**

The art of Hysteroscopy to remove Intrauterine devices has become essential not just for the gynaecologic endoscopic surgeon but even for the practising regular obstetrician and Gynaecologist. The incidence of IUD use among the basket of contraceptives is about 15% in India and it is increasing due to the advent of Postpartum IUCD (PPIUCD) thereby increasing the associated complications. IUDs may be misplaced in as many as 5 % of cases which may require Hysteroscopy.

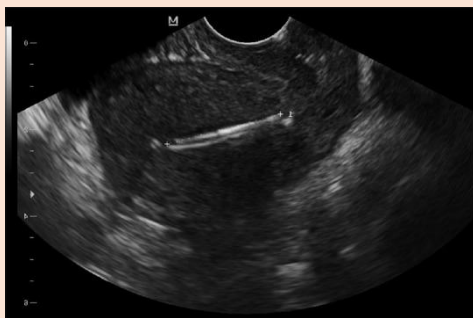
One of the most common clinical problem with IUDs is " Missing thread " or loss of filament / string or lost tail.

**This may be due to -**

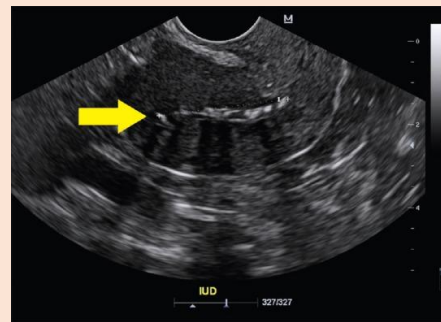
- 1) Thread retracted / coiled inside
- 2) torn off tail
- 3) Misplacement of device in uterine cavity
- 4) Device expelled unnoticed by patient .
- 5) Device embedded in cavity / Intra - mural penetration
- 6) Complete perforation and lying in peritoneal cavity .
- 7) Device pulled up by growing uterus in pregnancy .

### Methods of Identification

- 1) USG- Can detect IUD either within Uterine cavity or in peritoneal cavity. It can also diagnose/exclude pregnancy
- 2) Sounding the uterine cavity by a probe / uterine sound
- 3) If USG is negative, Xray Abdomen with A - P and lateral view after keeping probe/uterine sound into the uterine cavity.
- 4) Hysteroscope - for both diagnosing and retrieval of IUD.



IUD in uterine cavity



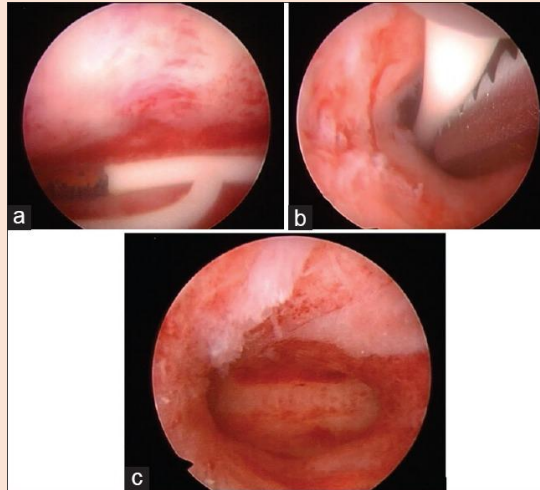
IUD partially embedded in cavity

### Procedures for retrieval of Misplaced IUDs

- 1) Extraction with a metal hook
- 2) Artery forceps
- 3) Uterine Curette

Success is not ensured with above methods, often failure and uterine/cervical trauma may occur along with severe pain if done without anaesthesia or adequate analgesia. Hysteroscopy as both a diagnostic and operative technique has enabled safe retrieval of Misplaced IUDs.





### **Hysteroscopic removal of IUD using grasper**

#### **Method of Hysteroscopy : -**

Office Hysteroscope Instrumentation- 2.9 mm, 30 ° Telescope

With Continuous flow 5mm(including inner & outer sheath) with 5 Fr' operating channel.

Smaller 2mm Telescope & smaller 4.2mm Hysteroscope can also be used without cervical dilatation or anaesthesia / analgesia.

Larger 4mm 30° Telescope with larger 6mm Hysteroscope with 5 Fr' or larger 7 Fr' operating channel can also be used but requires adequate analgesia / anaesthesia as cervical dilatation is required.

Distension media - Normal saline (most common )

5 Fr ' Biopsy/Grasping scissors.

Hysteromat or a Pressure pump

Light source with light cable

Camera with Monitor.

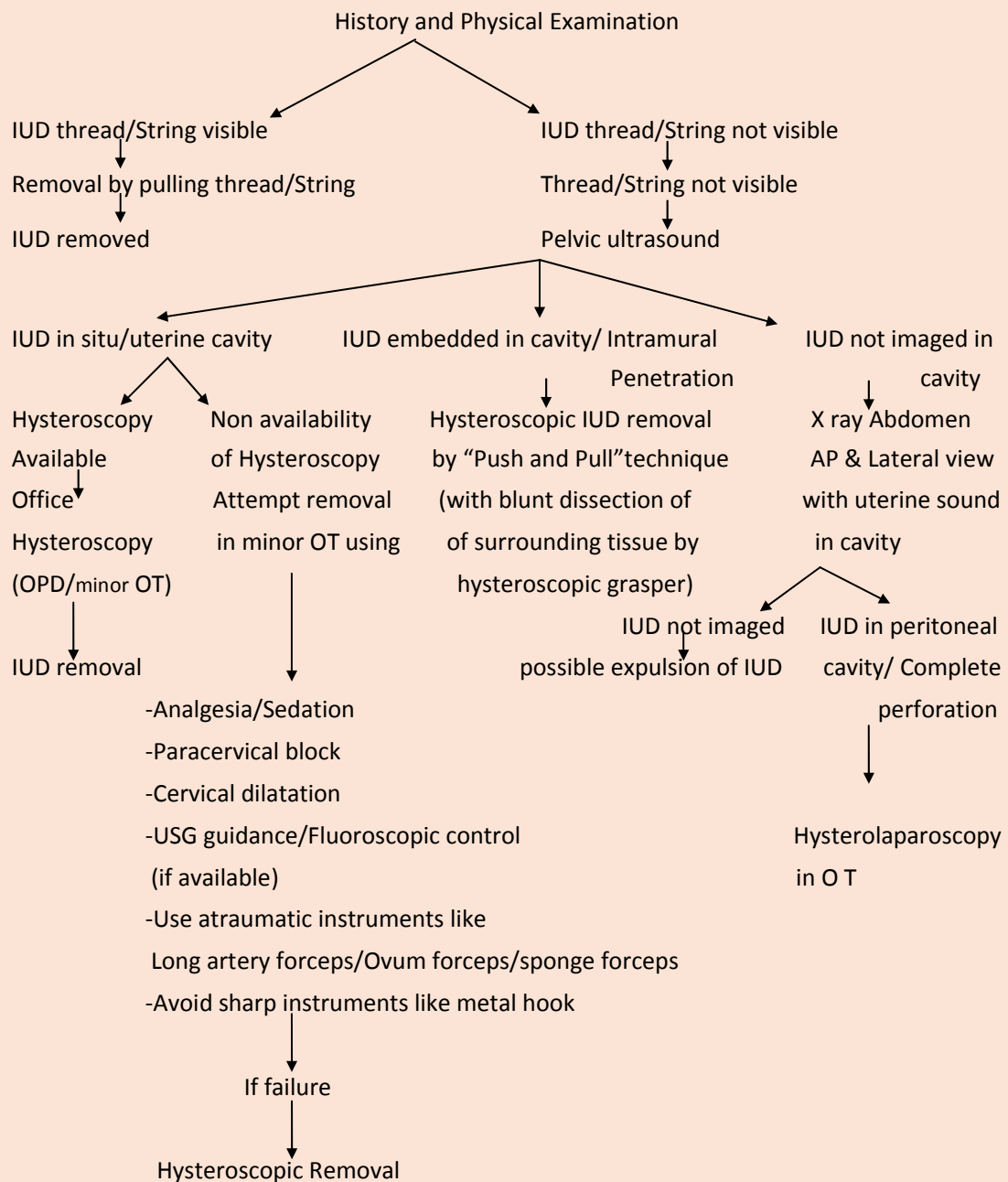
Office Hysteroscopy ( OPD procedure ) Can be done by using smaller Hysteroscopes ( 2mm or 2.9mm telescope ) without anesthesia after proper counselling of patient and taking consent .

Patient asked to empty bladder and placed in dorsal position at edge of Minor O.T. table .

Vaginoscopy is done initially without using speculum or holding the cervix. External Os is identified and hysteroscope enters into cervical canal and uterine cavity. IUD is identified, vertical limb is preferably held with 5 Fr 'grasper and IUD is pulled out along with Hysteroscope.

Hysteroscopic removal of intrauterine devices (IUDs) during the first trimester of pregnancy with missing thread/string is a viable option for patients who wish to continue their pregnancy, procedure done with utmost care by experienced surgeon. Miscarriage risk of about 10% should be explained before.

Minimum hospital stay, Comfort and avoidance of unnecessary radiation exposure makes Hysteroscopy the preferred method for localisation and removal of Misplaced IUDs.



## *REVIEW ON HYSTEROSCOPIC POLYPECTOMY*

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### **Introduction**

Endometrial polyps are focal intrauterine endometrial neo- plasm that may be single or multiple. Their size varies from few millimeters to several centimeters, and their morphology may be sessile with large or small implantation base or pedunculated. Endometrial polyps consist of three elements: endometrial glands, stroma, and blood vessels .

Known risk factors for the development of endometrial polyps are advanced age, hyperten- sion, obesity, and tamoxifen use . Endometrial polyps may be asymptomatic , and when causing symptoms, the most common clinical manifestations include abnormal (including postmenopausal) uterine bleeding and less commonly infertility .

Malignant transformation is rare, and occurs in 0%-12.9% of cases, based on large cohort analysis

### **Risk factors,**

Increasing age, hypertension, hyperestrogenism, and tamoxifen use are recognized as common risk factors for the growth of endometrial polyps.

Among the most common conditions causing hyperestrogenism, obesity, polycystic ovary syndrome, late menopause, estrogen secreting gonadal stromal tumors and chronic liver disease are the most frequent associated with endometrial polyps formation.

A three-fold risk for the incidence of endometrial polyps is found with the use of tibolone by postmenopausal women.

The use of the levonorgestrel-releasing intrauterine devices as a treatment for endometrial polyps has been showing spontaneous regression of the polyps



### **Clinical presentation**

Endometrial polyps can be asymptomatic or cause abnormal uterine bleeding, post-coital spotting, and/or infertility. Majority of premenopausal women complain abnormal uterine bleeding.

It is important to note that the severity of the symptoms do not correlate with the number, size or location of the polyps.

Infertility and subfertility have been associated to untreated endometrial polyps

### **Polyps and infertility**

Prevalence of endometrial polyps for asymptomatic infertile women range from 6-30%.

The accuracy of hysterosalpingography (HSG) for detecting polyps in women who desire to conceive is 21%.

Compared to 2D ultrasonography (TVUS), 3D TVUS with color- flow Doppler shows a higher diagnostic accuracy by enhancing endometrial and sub-endometrial vascularization indices

The results are better if TVS is performed in proliferative phase.

Combining endometrial echogenicity, thickness, and volume with 3D TVUS is better than single measurements with 2D TVUS for detecting endometrial polyps

Endometrial polyps might alter endometrial receptivity, impairing embryo implantation and reducing pregnancy rates.

Hysteroscopic polypectomy doubled the chances of becoming pregnant when compared to who did not undergo polypectomy. A significant increase of pregnancy rates after resection of polyps located at the utero- tubal junction rather than other areas of the uterine cavity..

The rate of intrauterine adhesion formation after hysteroscopic polypectomy is considered negligible,

### **Polyp and malignancy**

Prevalence of premalignant and malignant lesions in patients with endometrial polyps is estimated between 3.4 % and 4.9 % in postmenopausal and 1.1 % in premenopausal women'. Saline contrast sonohysterography showed reliability for the diagnosis of endometrial polyps,

The risk of malignancy of endometrial polyps in women with abnormal uterine bleeding or postmenopausal bleeding is not related to the size of the lesions.

The presence of abnormal uterine bleeding is associated to a significant elevated risk of atypical hyperplasia or carcinoma in post-menopausal women

The risk of hyperplasia and cancer in polyps with an endometrial thickness 10.8mm on TVUS was found 5.5-fold. The use of blind D&C or blind endometrial biopsy should be avoided due to reported inaccuracy in diagnosing endometrial polyps.

### Management of the patient with endometrial polyps

Hysteroscopy with the use of bipolar electrosurgical removal of polyps is worldwide available at a reasonably low cost. Visualization and direct polyp removal are reported to be effective and reduce the risk of recurrence

Other instruments include the mini-resectoscope system, which can also be used in the in-office setting, hysteroscopic tissue removal systems, and the diode laser

For women with atypical hyperplasia perform hysterectomy and bilateral salpingo-oophorectomy, in patients not desiring future fertility

For women without atypical hyperplasia hysteroscopic polypectomy is sufficient.

### Incidentally diagnosed endometrial polyps

Asymptomatic endometrial polyps in postmenopausal women should be removed in case of large diameter ( $> 2$  cm) or in patients with known risk factor for endometrial carcinoma.

The removal of small polyps ( $< 2$  cm) in postmenopausal asymptomatic patients is not cost-effective.

The resection of asymptomatic polyps in young women should be considered whereas a common risk factor or an increased ( $> 2.2$  cm) diameter is present.

### REFERENCE:

- Endometrial polyps. An evidence-based diagnosis and management guide: Salvatore G V et.al. *Eur Journ of Obste & Gynecol and Repro Bio* 260 (2021) 70–77. <https://doi.org/10.1016/j.ejogrb.2021.03.017>

## HYSTEROSCOPIC DIAGNOSIS IN RECURRENT MISCARRIAGES

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**Definition of Recurrent Miscarriages in the guidelines.**

ESHRE	DGGG/OEGGG/SGGG	ASRM	RCOG
≥ 2 miscarriages	≥ 3 consecutive miscarriages	≥ 2 miscarriages (after sonographic or histopathological confirmation of pregnancy)	≥ 3 consecutive miscarriages

### Procedure recommended

*In women < 35 years possibly after ≥ 2 miscarriages, adjusted to other factors, such as sonographic or histopathological confirmation of pregnancy, autoimmune diseases, anatomical anomalies or other existing risk factors. In women > 35 years after ≥ 3 consecutive miscarriages.*

The role of hysteroscopy is to detect possible intrauterine changes that could interfere with implantation or growth, or both, of the conceptus. However the hysteroscopy is still an invasive procedure and its role in routine management of recurrent miscarriages is to be evaluated.

The prevalence of uterine anomalies is 13.3% in cases of RPL and 5.5% in other fertile population. 19% of women with RPL has one of the following uterine abnormality-

□ Congenital anomalies as septate , unicornuate, bicornuate uterus with unequal uterine horns

□ Aquired anatomical defects like , endometrial cavity adhesions ,

intracavitary/ submucosal fibroid , endometrial ployps.

- Small tubular uterine cavity either congenital or secondary to diethyl stilboestrol exposure in utero or genital tuberculosis.
- Cervical incompetence associated with uterine anamolies like,unicarnuate or bicarnuate uterus.

To diagnose all above mentioned uterine causes of RPL hysteroscopy is not only gold standard for diagnosis but also allows remedial action at the same time such as excision of polyps, adhesions, submucous myomas and uterine septum. It is considered a second line test for diagnosing anatomical causes first line being TVS with 3D,HSG,sono hysteroigraphy.

Following are the Green-top Guidelines no.17 related to anatomical factors of RPL.

Congenital uterine anomalies

Risk table anatomical factors.

Risk factor	Association	Evidence level	Strength
Congenital uterine anomalies	Increased risk of miscarriage with septate and bicornuate uteri	2++	B

The prevalence to be 5.5% in unselected women, 8.0% in infertile women, 13.3% in women with recurrent miscarriage and 24.5% in women with infertility and miscarriage. The commonest anomalies appear to be the canalisation defects (i.e. the septate variety) followed by the unification defects (i.e. the bicornuate and unicornuate variety). *[Evidence level 2++]*

## First trimester miscarriage

In terms of reproductive outcomes, a meta-analysis has shown that the risk of sporadic first trimester miscarriage was not significantly increased in women with arcuate, didelphys, and unicornuate uteri versus normal controls.*[Evidence level 2++]* However, women with septate and bicornuate uteri had a significantly increased risk of sporadic first trimester miscarriage versus normal controls. *[Evidence level 2++]*



**Second trimester miscarriage**

The risk of sporadic second trimester miscarriage was not significantly increased in women with didelphys and unicornuate uteri versus normal controls.*[Evidence level 2++]*

However, women with arcuate, septate and bicornuate uteri had a significantly increased risk of sporadic second trimester miscarriage versus controls.*[Evidence level 2++]*

Using gold standard 3D ultrasound solely to diagnose the arcuate uterus (in contrast to the varying diagnostic modalities included in the studies of the meta-analysis), reported similar clinical pregnancy and live birth rates between arcuate and normal uteri.

<b>Recommendation</b>	<b>Evidence quality</b>	<b>Strength</b>	<b>Rationale for the recommendation</b>
<b>Women with recurrent miscarriage should be offered assessment for congenital uterine anomalies, ideally with 3D ultrasound.</b>	<b>2++</b>	<b>B</b>	<b>Based on evidence from meta-analyses and potential benefit from diagnosis and treatment</b>

**Controversy regarding the septate uterus**

The different classifications have been a point of contention in the literature, particularly with regards to the diagnosis of the septate uterus, the anomaly most amenable to surgical treatment. As a result, different criteria have been made for the diagnosis of the septate uterus, including a percentage of fundal cavity indentation of more than 50%, a depth of fundal cavity indentation of more than 15 mm with an indentation angle of less than 90° (ASRM definition of 2016), a depth of fundal cavity indentation of more than 10 mm (CUME classification), and most recently a depth of fundal cavity indentation of more than 10 mm with a septum angle of less than 90° (ASRM 2021 classification).  
*[Evidence level 2+]*

Resection of a uterine septum should be considered for women with recurrent first or second trimester miscarriage, ideally within an appropriate audit or research context. [Grade C]

## Acquired uterine anomalies

Risk table anatomical factors.

Risk factor	Association	Evidence level	Strength
Acquired uterine anomalies	Remains uncertain due to limitation of studies and methodological quality	3	D

There are limited prospective case–control data evaluating the association between acquired uterine anomalies and sporadic or recurrent miscarriage.

## Myomas

Women with submucosal and intramural/subserosal myomas were found to have a higher proportion of second trimester miscarriages compared with women with unexplained recurrent miscarriage (21.7% and 17.6% versus 8.0% respectively;  $P < 0.01$ ). Women with submucosal myomas undergoing resection had a significant reduction in second trimester miscarriage rates (21.7% to 0%;  $P < 0.01$ ), although there was a lack of a case–control group to compare what the outcome would have been if women with submucosal myomas had not undergone resection. In the same study, women with intramural/subserosal myomas did not undergo surgery and experienced similar live birth rate compared with the unexplained recurrent miscarriage group in the subsequent pregnancy. [Evidence level 3]

## Endometrial polyps

There are no data to our knowledge specifically examining the effect of polyps on sporadic or recurrent miscarriage. Therefore, it seems reasonable to recommend management similar to that of the general population.

**Intrauterine adhesions**

These include: i) constriction of the uterine cavity caused by adhesions, ii) lack of a sufficient amount of normal endometrial tissue to support implantation and development of the placenta, and iii) defective vascularisation of the residual endometrial tissue consequent upon fibrosis of endometrium.*[Evidence level 3]*

The incidence of intrauterine adhesions increases with the number of previous miscarriages experienced (OR 1.99, 95% CI 1.32–3.00; seven studies) and the number of previous dilatation and curettage procedures (OR 2.05, 95% CI 1.35–3.12; seven studies).*[Evidence level 2++]*

Small cohort studies have, suggested that women with intrauterine adhesions and endometrial thickness less than 5 mm have higher sporadic miscarriage rates versus women with endometrial thickness of more than 5 mm (50% versus 8.3%;  $P < 0.001$ ).*[Evidence level 3]*

**Chronic endometritis:**

- Chronic endometritis secondary to PID in milder asymptomatic forms cause RPL.
- The incidence of chronic endometritis in women with recurrent miscarriage was 10.8%, twice higher than that of fertile women (5.0%).
- Low virulence bacteria like atropobium sp, prevotella and streptococci sp. that are difficult to grow on culture.
- Diagnosis is made by dismorphic endometrium, polyps, endometrial fluid during mid cycle on USG.
- On Hysteroscopy diagnostic criteria are, presence of focal redness, strawberry appearance and micro polyps in endometrium.



# HYSTEROSCOPIC TUBAL STERILIZATION

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## BACKGROUND:

Female sterilization is one of the most common method of contraception.

It can be performed through laparoscopic, abdominal or hysteroscopic approaches.

The hysteroscopic sterilization is a safer option than sterilization through laparoscopy or laparotomy because it avoids invading the abdominal cavity and general anaesthesia.

It is a minimally invasive alternative to laparoscopic tubal ligation for women wanting permanent contraception.

## PROCEDURE:

It is an outpatient procedure which involves non surgical placement of a tiny device called a micro insert in to the fallopian tube. Office hysteroscopy is performed to visualise the uterine cavity and fallopian tubes.

Once the microinserts are in place, scar tissue forms around them and blocks the fallopian tubes.

## TIMING:

Microinserts should be implanted in the early proliferative phase of the menstrual cycle to avoid placement during an early undiagnosed pregnancy and a thickened endometrium, which may compromise the visual field.



**DEVICES USED:**

In the past decades, three systems were available for hysteroscopic sterilization.

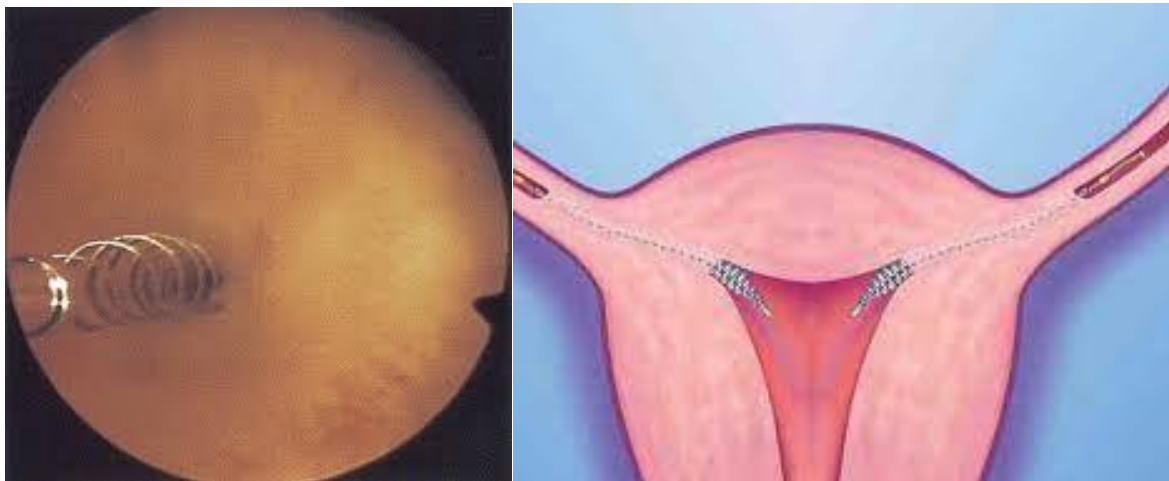
The Ovabloc Intra Tubal Device in 1988, (Advanced Medical Grade Silicones BV)

The Essure system in 2002 (Conceptus Incorporated) and The Adiana Permanent Contraception system in 2009(Hologic, Inc.).

The Ovabloc device is a silicon mixture that is instilled into the tubal ostium which solidifies within 5 minutes into a rubber plug.

The Essure device is a 4-cm expanding spring made of a nitinol (nickel titanium) outer coil and stainless steel inner coil with polyethylene terephthalate (PET) fibers that is placed in the proximal section of the fallopian tube.

The Adiana matrix is a biocompatible implant composed of fully cured silicone.



The device initially appears in a compressed form, and is inserted by hysteroscopy to reach the proximal fallopian tube under direct vision. After being positioned, there is an expansion of the implant that anchors it to the tube, reaching 2 mm in diameter. Polyethylene terephthalate fibers stimulate the proliferation of adjacent tissue through inflammation and the formation of fibrosis

enveloping and infiltrating the device. The result is tubal occlusion after a few weeks.

### CONTRAINDICATIONS:

- Patient uncertainty about desire to end fertility
- Known abnormality of the uterine cavity or fallopian tubes that makes visualization of the tubal ostia and/or cannulation of the proximal fallopian tube difficult or impossible
- Pregnancy or suspected pregnancy
- Delivery or termination of a pregnancy less than 6 weeks before microinsert placement
- Active or recent upper or lower pelvic infection
- Known allergy to contrast media
- Known hypersensitivity to nickel confirmed by skin test

### ADVANTAGES:

The procedure can be performed in 10 minutes in an office setting Does not need the use of anaesthesia

Lower pregnancy rates compared to tubal ligation

Lower complication rates compared to tubal ligation

### DRAW BACK :

While the conventional laparoscopic approach and sterilization via minilaparotomy\_ are considered to be effective immediately, hysteroscopic systems require a period of 3 months after the procedure for the fallopian tubes to undergo fibrosis leading to occlusion and contraceptive effectiveness.

During these 3 months, women have to use alternative contraception.

Even at that time, if bilateral tubal occlusion is not confirmed, the patient should continue alternative contraception for 3 additional months.

### CONFIRMATION OF PROPER PLACEMENT:

A hysterosalpingogram (HSG), pelvic X-ray, or ultrasound is used to verify correct placement.

Pelvic x-ray and transvaginal ultrasound are first-line confirmation tests. HSG is recommended when there is:

- Difficulty or uncertainty during the placement of microinserts
- Procedure time greater than 15 minutes
- Zero or more than 7 coil loops of a microinsert visible in the uterus (indicating the device is not correctly placed inside the fallopian tube)
- Unusual postoperative pain without any other identifiable cause
- Hysterosalpingogram is also recommended if x-ray or transvaginal ultrasound results are unsatisfactory or equivocal.

### COMPLICATIONS:

They are associated with complications like uterine perforation, device migration and infection

The insertion failure rate is 5 to 10% due to tubal spasm, tubal occlusion or anatomic variation.

Success rate was not significantly associated with parity, mode of analgesia, NSAID premedication, or combination with another procedure.

All the 3 devices have been discontinued and the last one was Essure which was withdrawn in 2019. However, clinicians should be familiar with them in order to care for patients who have undergone these procedures.

Research on newer devices is ongoing at present

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**BSGE/ESGE GUIDELINE ON  
MANAGEMENT OF FLUID DISTENSION  
MEDIA IN OPERATIVE HYSTEROSCOPY**

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**INTRODUCTION**

The uterine cavity needs to be distended by a medium which could either be fluid or carbon dioxide. Carbon dioxide can be used for diagnostic hysteroscopy, but as bleeding during operative procedures obscures visibility. For this reason, fluid media are used for operative procedures, as they allow continuous irrigation giving a clear picture and enable use of both mechanical and electrosurgical instruments.

Excessive fluid absorption is most likely with prolonged hysteroscopic procedures requiring continuous irrigation of fluid or where blood vessels within the myometrium are opened. Operative hysteroscopic procedures are usually carried out using resectoscopes which are larger diameter, continuous flow operating hysteroscopes. These devices were initially developed to use monopolar current, which require non-electrolyte distending media such as glycine and sorbitol. But excessive absorption can cause a number of complications including hyponatremia, a variable degree of hypo osmolality.

Isotonic electrolyte-containing solutions cannot be used with monopolar energy because this leads to activation of ions that disperse the electric current and reduce the power density. Hence the heat generated in tissues is insufficient to destroy or have a tissue effect.

Resectoscopes have now been developed to use bipolar electrical current with the advantage that they are compatible with electrolyte-containing distension solutions such as physiological normal saline and Ringer's lactate. But excessive absorption can, as with monopolar current, lead to expansion of the extracellular fluid volume with the potential to generate fluid overload, pulmonary oedema, hypertension and cardiac failure.



A fluid deficit of more than 1000 ml should be used as threshold to define fluid overload when using hypotonic solutions in healthy women of reproductive age. A fluid deficit of 2500 ml should be used as threshold to define fluid overload when using isotonic solutions in healthy women of reproductive age.

Surgeons should understand the factors that can lead to systemic fluid absorption. High intrauterine distension pressure, low mean arterial pressure, deep myometrial penetration, prolonged surgery and large uterine cavities increase the likelihood of systemic fluid absorption. The intrauterine pressures > 75 mm Hg increases the volume of media passing back along the fallopian tubes and into the peritoneal cavity .

Severe complications are more likely with hypotonic (low osmolality) electrolyte free solutions, women of pre-menopausal status and those with cardiovascular or renal disease. These include morbidity and mortality arising from cardiovascular complications (pulmonary oedema and heart failure) and neurological complications (cerebral oedema, neurological impairment and seizures).

Where excessive systemic absorption of fluid distension media is suspected, strict fluid balance monitoring should be commenced, a urinary catheter inserted and serum electrolytes measured. If the patient develops signs of cardiac failure or pulmonary oedema a cardiac echocardiogram and chest X-ray should be undertaken. Asymptomatic hypervolemia with or without hyponatraemia should be managed by fluid restriction with or without diuretics. The management of symptomatic hypervolemic hyponatraemia requires multidisciplinary involvement including anaesthetists, physicians and intensivists in a high dependency or intensive care unit. Initial treatment with 3 % hypertonic sodium chloride infusion is indicated to restore serum sodium concentrations to safe levels.

Fluid absorption of over 1000 ml of hypotonic solution can cause clinical hyponatraemia. Mild symptoms can develop even with absorption of 500–1000 ml of a hypotonic solution. Larger volumes of isotonic solution need to be absorbed to cause symptomatic fluid overload but there are no data to define a safe threshold.

Isotonic electrolyte-containing distension media such as normal saline should be used with mechanical instrumentation and bipolar electrosurgery because they are less likely to cause hyponatraemia if fluid overload occurs. Hypotonic,

electrolyte-free distension media such as glycine and sorbitol should only be used with monopolar electrosurgical instruments. Carbon dioxide gaseous media should not be used for operative hysteroscopy.

Preoperative administration of GnRH agonists should be considered in premenopausal women before hysteroscopic resection of fibroids. Intracervical injection of dilute Vasopressin can be considered before dilatation of the cervix.

The intrauterine pressure needed for distension should be maintained as low as possible to allow adequate visualisation and kept below the mean arterial pressure.

Delivery of the distension medium can be safely and effectively achieved using simple gravity, pressure bags or automated delivery systems.

Automated pressure delivery systems facilitate the creation of a constant intrauterine pressure and accurate fluid deficit surveillance which is advantageous with prolonged cases such as endometrial resection or hysteroscopic myomectomy.

Drapes that contain a fluid reservoir should be used as they allow measurement of the fluid output. Automated fluid measurement systems are more accurate than manual measurement but they can still overestimate fluid deficit. Their use cannot guarantee safety but might be useful when undertaking complex hysteroscopic procedures where fluid absorption is anticipated. Measurement of the fluid deficit should be done at a minimum of 10 min intervals during hysteroscopic surgery.

Where feasible, the use of local anaesthesia with sedation should be considered for performing operative hysteroscopic procedures rather than general anaesthesia because fluid overload may be minimised

A maximum fluid deficit of 2500 ml should be set when using an isotonic solution in a healthy woman and surgery immediately stopped on reaching this limit & Lower thresholds for fluid deficit should be considered in the elderly and women with cardiovascular, renal or other co-morbidities. Suggested upper limits are 750 ml for hypotonic solutions and 1500 ml for isotonic solutions although these limits may need to be reduced depending upon the clinical condition of the woman during surgery.

**Reference: <http://creativecommons.org/licenses/by/4.0/>**

# Hysteroscopic Tubal Cannulation

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## INTRODUCTION

*Fallopian tubes are an important site for the sperm-egg binding, and their normal functioning serves as a prerequisite for natural conception. Obstruction of fallopian tubes, is also one of the main causes of infertility. Tubal disease accounts for 25 to 30% of infertility in women<sup>1</sup> and Proximal tubal obstruction and occlusion accounts for 10 to 15% of tubal factor. Tubal disease, especially proximal tubal occlusion, is a common cause of tubal infertility. However, it has been found that it is probably over diagnosed, as intrauterine pregnancies do occur spontaneously in women with proximal tubal blockage diagnosed by hysterosalpingography (HSG) and/or laparoscopy and dye<sup>1</sup>. If tubal surgery is effective, it may enable couples to conceive naturally without further intervention.<sup>6</sup>*

*Technological advances in endoscopy and development of a minimally invasive technique for correction of proximal tubal block began with interest in transcervical tubal sterilization. Since then, a variety of instruments and techniques have been developed for cannulation of fallopian tube.*

*Proximal tubal obstruction may be classified*

1. Nodular- Salpingitis Isthmica Nodosa ( SIN), Endometriosis
2. Non Nodular- Detritus, Spasms. Polyps.

Most of the proximal tubal obstructions are thought to be caused by inflammatory process or endometriosis, which leads to local fibrosis, and only 25-30 % of cases shows and organic pathology. Hence in the rest of the situation the tubes appeared normal or patent with moderate fibrosis or inflammation. Surgical correction is not warranted in majority of the Proximal tubal blocks since there is no true block.

### **Hysteroscopic tubal Cannulation**

Cannulation of the Fallopian tube are not new although visual guided cannulation begun only after introduction of hysteroscopy. Most often the procedure is done under laparoscopic guided procedure.

#### **Method of Hysteroscopic cannulation**

Flexible guide wire through the catheter with an operating hysteroscope, Hopkins II or Bettocchi continuous flow operating sheath (3.9x5.9mm Oval profile). It allows for an insertion in round flexible space. It is big enough for insertion in a cervical canal or internal OS without dilatation or anaesthesia. Distending medium used is Normal saline. All cases are done under general anaesthesia or conscious sedation. Novy's platinum tipped guidewire and curved cannula are better whenever the patient can afford it. Fine Terumo guidewire with regular tubal catheter is more economical.

### **Efficacy**

#### **Guideline Recommendations**

1. According to the literature, fallopian tube recanalisation by guidewire achieves tubal patency in about 70% of women with proximal tubal obstruction, and pregnancy in 10 to 20%.
2. For women with proximal tubal obstruction, selective salpingography plus tubal catheterisation, or hysteroscopic tubal cannulation, may be treatment options because these treatments improve the chance of pregnancy. [NICE,2004]

3. For women with proximal tubal obstruction, selective salpingography plus tubal catheterisation, or hysteroscopic tubal cannulation, may be treatment options because these treatments improve the chance of pregnancy. [NICE,2004]
4. The evidence is fair to recommend tubal cannulation for proximal tubal obstruction in young women with no other significant infertility factors

Selective salpingography can provide information about proximal and distal tubal obstruction. An RCT (n = 273) reported that selective salpingography was a better diagnostic test for proximal tubal obstruction than laparoscopy and dye.<sup>3</sup> [Evidence level 1b] Selective salpingography combined with tubal cannulation can be adopted as a 'see and treat' approach for proximal tubal obstruction in appropriately selected patients.

### **Meta analysis**

One would have expected that in studies where diagnosis of tubal obstruction was achieved by HSG alone, there would be higher pregnancy rates (due to the associated high false positive rate) compared with laparoscopic Chromopertubation <sup>1</sup> . It was therefore interesting to see a statistically significant increase in clinical pregnancy rate following tubal catheterization for occlusion diagnosed by laparoscopy (either alone or in conjunction with HSG or sono-HSG), compared with HSG alone. This may be explained by distal factors (e.g. adhesions, endometriosis and hydrosalpinges) contributing to infertility that could not be identified, and subsequently corrected, in those undergoing HSG or sono-HSG. This explanation also fits in with the fact that, although not statistically significant, patients who underwent catheterization under hysteroscopic-laparoscopic guidance had a higher clinical pregnancy rate compared with those who underwent catheterization under fluoroscopic guidance.

**Benefits of tubal cannulation :** Over sonographic guided or fluoroscopic guided cannulation comes from the fact that along with hysteroscopic cannulation, simultaneous laparoscopic guidance is used, as, endoscopy offers a complete evaluation of the female infertility or there could be mild peritubal or periovarian adhesions, which could be treated laparoscopically. Visualization of early stages of endometriosis and in developing countries of tuberculosis can be made by simultaneous laparoscopy. So, hysteroscopy appears to be a minimally invasive method over open laparotomy for tubal microsurgery, or tubocornual implantation. It is more informative and therapeutic as compared to selective



*salpingography or ultrasound guided methods of cannulating tubes in proximal tubal block. When compared to IVF-ET, it offers all the ease with which the tubes are opened up if cannulation is successful. Firstly, no repeat treatment is needed for next pregnancy and uterotubal cannulation is much more cost effective as compared to IVF-ET. So, hysteroscopic cannulation appears to be more effective than fluoroscopic guided cannulation or open microsurgical repair or IVF-ET, as all these have limitations, are more invasive and are much more expensive modalities.*

*Hysteroscopic tubal cannulation was associated with a higher pregnancy rate than selective salpingography plus tubal catheterisation (49% with hysteroscopy versus 21% with salpingography). [Evidence level 2b-3] As no untreated group was included in any of the studies reviewed, the likelihood of spontaneous pregnancy without treatment cannot be determined. Intrauterine pregnancy in women with proximal tubal blockage diagnosed by both HSG and laparoscopy/dye does occur without surgical treatment<sup>2</sup>. [Evidence level 3] Tubal perforation (a complication associated with tubal cannulation) has been reported to occur in 2- 5% of women undergoing tubal cannulation,<sup>1,2</sup> although the clinical significance of this was not reported. Ectopic pregnancy occurred in 3-9% of women undergoing selective salpingography plus tubal catheterisation<sup>4</sup>. [Evidence level 2b-3]*

### **Complications**

1. Perforation
2. Infection
3. Ectopic pregnancy

### **Conclusion:**

*Hysteroscopic cannulation appears to be a treatment modality of choice in Proximal tubal occlusions as it offers diagnostic and therapeutic benefit at the same time with least incidence of complications.*

# HYSTEROSCOPIC GUIDED ENDOMETRIAL BIOPSY

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**Objective:** to study the diagnostic accuracy of endometrial biopsy performed with hysteroscopy for the detection of intrauterine pathology.

## **Prerequisites**

### **1. Preoperative ripening of the cervix ( references 1-12)**

- There is insufficient evidence to recommend routine cervical ripening before diagnostic or operative hysteroscopy, but it may be considered for those patients at higher risk of cervical stenosis or increased pain with the surgical procedure.
- Intravaginal misoprostol administration of 400 micrograms has been shown to decrease pain during and after office hysteroscopy when administered at least 4 hours before the procedure, likely because of the decreased need for dilation. Data support that with the addition of 25 micrograms vaginal estrogen 14 days before the procedure, along with 400–1000 micrograms vaginal misoprostol 12 hours before the procedure, ease of cervical dilation and reduction in pain was substantial in postmenopausal patients.

## **Timings**

- In premenopausal women with regular menstrual cycles, the optimal timing for diagnostic hysteroscopy is during the follicular phase of the menstrual cycle after menstruation. Pregnancy should be reasonably excluded before performing hysteroscopy.
- Some women with unpredictable menses can be scheduled at any time for operative hysteroscopy, but ideally patients who are

actively bleeding may not undergo the procedure because adequate visualization could be impaired.

### Advantages

1. Short OT time
2. Complete lesion removal ( endometrial polyp and type 0 or 1 leiomyoma) compared with conventional resectoscope.

27, 28, 29,

### Disadvantage

1. Cost of disposable devices along with their associated fluid management systems.
2. Lack of electrosurgical element in some of there devices, resulted in inability to cauterize bleeding vessels.
3. Limited data on capability to treat type 2 leiomyomas

### Indications (ACOG Box1 )

1. Removal of foreign bodies ( e.g. intrauterine devices with non-visualized strings or intrauterine devices that are malpositioned)
2. Diagnose & treatment of intrauterine adhesions
3. Correction of septate uteri
4. Detection of malignancy
5. Management of caesrean scar pregnancy
6. Management of retained products of pregnancy or focal accreta
7. Detection & treatment of isthmocoele
8. Tubal canulation

### Complications

1. Perforation 13,14
2. Air and gas embolism 22,23,24,25
3. Infection 15,13,16,17,18,19,20
4. Fluid overload
5. Hemorrhage
6. Vasovagal reaction 26
7. Electrosurgical injury 2



## **HYSTEROSCOPY SEPTAL RESECTION AND ITS OUTCOME**

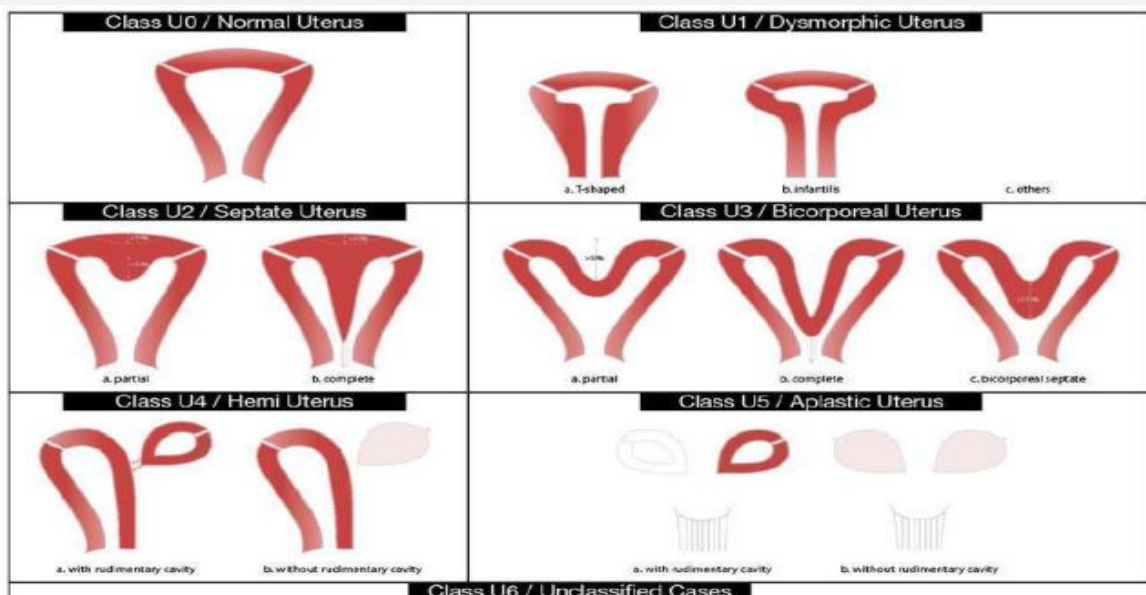
**Dr Umamaheshwar Sindur.**

**Managing Director, Consultant.**

**Sindur hospital Vijayapur**

**Objective:** The purpose of this study is to review the literature regarding septate uterus and determine optimal indications and methods of treatment for it.

**Introduction:** Septate uterus is the most common uterine anomaly, accounting for 35% of all identified uterine anomalies.<sup>1</sup>



The ESHRE/ESGE classification system for female genital congenital anomalies (Grimbizis 2013)<sup>2</sup>.

The definition of the septum by the European Society of Human Reproduction and Embryology and the European Society for Gynecological Endoscopy (ESHRE-ESGE) criteria is an internal indentation extending >50% of myometrial wall thickness<sup>3</sup>, while the American Society for Reproductive Medicine (ASRM) criteria provide no strict parameters to define septate configurations<sup>4</sup>

American Society for Reproductive Medicine defines uterine septum as having Internal fundal indentation depth  $\geq 1.5$  cm and angle of internal indentation  $< 90^\circ$  and external fundal indentation depth  $< 1$  cm. <sup>5</sup>



### **DIAGNOSIS OF SEPTATE UTERUS:**

3-dimensional (3-D) ultrasonography combined with saline infusion had 100% accuracy when compared with laparoscopy/hysteroscopy. <sup>6</sup> 3-D ultrasound without saline infusion has been found to be over 88% accurate <sup>6</sup>

MRI is an accurate method to diagnose mullerian abnormalities overall, it is only 70% accurate for the diagnosis of uterine septum <sup>7</sup> compared with hysteroscopy/laparoscopy, several studies indicate that the diagnostic accuracy of HSG ranges from 5.6% to 88% <sup>8</sup>

3-D ultrasound, sonohysterography, and MRI are good diagnostic tests for distinguishing a septate and bicornuate uterus when compared with laparoscopy/hysteroscopy. (Grade B) <sup>5</sup>

It is recommended that imaging with hysteroscopy should be used to diagnose uterine septa rather than laparoscopy with hysteroscopy because this approach is less invasive (Grade B).<sup>5</sup>



**SEPTATE UTERUS AND ADVERSE PREGNANCY OUTCOME**

The incidence of early miscarriage was 41.1% in patients with septate uterus compared with 12.1% in the control population. Late abortions and premature deliveries developed in 12.6% of patients with septate uterus compared with 6.9% in the general population. <sup>9</sup>

A meta-analysis<sup>10</sup> evaluated the effect of congenital uterine anomalies on reproductive outcomes and found that septate uterus was associated with a higher risk of adverse pregnancy outcomes (33). Women with a septate uterus were noted to have a higher rate of first-trimester miscarriage when compared with controls (RR 2.65, 95% CI, 1.39–5.06).<sup>10</sup>

There is fair evidence that a uterine septum contributes to miscarriage and preterm birth. (Grade B). Some evidence suggests that a uterine septum may increase the risk of other adverse pregnancy outcomes such as malpresentation, intrauterine growth restriction, placental abruption, and perinatal mortality. (Grade B) <sup>5</sup>

**SEPTAL RESECTION AND OBSTETRICAL OUTCOMES**

Meta-analysis evaluated Women who underwent septum incision had a significantly decreased probability of spontaneous abortion compared with women who did not undergo treatment (RR 0.37, 95% CI, 0.25–0.55). <sup>11</sup>However, the probability of preterm labor in women <37 weeks was not significantly lower in women who had undergone septum incision compared with those who had not (RR 0.66, 95% CI)

Some limited studies indicate that hysteroscopic septum incision is associated with a reduction in subsequent miscarriage rates and improvement in live-birth rates in patients with a history of recurrent pregnancy loss. (Grade C) <sup>5</sup>

Some limited studies indicate that hysteroscopic septum incision is associated with an improvement in live-birth rate in women with infertility or prior pregnancy loss. (Grade C) <sup>5</sup>

**SURGERY TO TREAT A UTERINE SEPTUM**

Commonly used techniques include incision of the septum utilizing cold scissors, unipolar or bipolar cautery, or laser, or resection of the septum. Use of distending media for the uterus is dependent on the incision technique or energy source and includes saline, glycine. There are few RCTs evaluating the efficacy of or complications among hysteroscopic techniques compared to another.

There is insufficient evidence to recommend a specific method for hysteroscopic septum incision. (Grade C) <sup>5</sup>

**DURATION AFTER SURGICAL TREATMENT OF A UTERINE SEPTUM TO CONCEIVE**

The available evidence <sup>12</sup>suggests that the uterine cavity is healed by 2 months postoperatively, there is insufficient evidence to advocate a specific length of time before a woman should conceive. (Grade C) <sup>5</sup>

**POST SEPTAL RESECTION ADHESION PREVENTION:**

Various treatment options have been proposed to decrease this risk include Antibiotics, Postoperative Hormone therapy (2 mg estradiol valerate and 0.5 mg norgestrel once daily ), placement of an intrauterine balloon (Foley balloon placement 14 French pediatric Foley balloon with 5 mL normal saline for 5 days)

But there is insufficient evidence to recommend for or against adhesion prevention treatment, or any specific method following hysteroscopic septum incision. <sup>5</sup>

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# **DIAGNOSTIC HYSTEROSCOPY**

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## **INTRODUCTION**

Hysteroscopy is a minimally invasive procedure which is performed to diagnose and treat diseases of the uterine cavity and the cervical canal. Hysteroscopy can be performed either in the operating room or the office.

the joint The American College of Obstetricians and Gynecologists(ACOG) and the American Association of Gynecologic Laparoscopists (AAGL) recommendations include the following

## **INDICATIONS**

Polyps, synechiae, Mullerian abnormalities, leiomyomata and retained foreign bodies can often be diagnosed and treated successfully with hysteroscopy. Visualization of the endometrial cavity allows biopsy of abnormal areas and can optimize the diagnosis of hyperplasia or malignancy

## **CONTRAINDICATIONS**

- Known pregnancy
- Active herpetic infection
- Genital tract infection
- Known advanced stage cervical/ uterine malignancy

**PREOPERATIVE CONSULTATION**

- Discuss risks/ benefits/ alternatives
- Review medical history
- Exclude pregnancy if appropriate

**TIMING/OPTIMIZE VISUALIZATION**

- Perform during follicular phase of cycle, after menses | Secretory phase may mimic polyps: Irregular menses may be scheduled at any time
- Actively bleeding “may not undergo the procedure” due to decreased visibility
- Pretreatment with progestins or combined OCP may further optimize visualization by thinning the endometrial lining

**ANTIBIOTIC PROPHYLAXIS**

- Not recommended

**PAIN MANAGEMENT**

Multiple pharmacologic approaches described, but evidence insufficient to recommend any particular analgesic regimen | No regimen has been shown to be superior to placebo

NSAIDS | Topical anesthetic | Acetaminophen | Benzodiazepines (anti-anxiety medications) | Opiates | Intracervical and/or paracervical block

Non-pharmacologic

<5 mm diameter hysteroscopes | Flexible hysteroscopes | Vaginoscopic approach

**CERVICAL RIPENING**

“Insufficient evidence to recommend routine cervical ripening before diagnostic or operative hysteroscopy”

Consider if risk of cervical stenosis or increased procedural pain



Misoprostol (off label)

200 to 400 micrograms oral or intravaginal the night before surgery (12 hours prior to procedure)

Postmenopause: 25 micrograms vaginal estrogen 14 days prior to procedure plus misoprostol 12 hours prior to procedure

Osmotic dilators

Data to support use | Requires additional office visit | Must be removed if procedure is cancelled

## **VASOCONSTRICTORS**

### **(Epinephrine or vasopressin)**

Potential benefits: Less bleeding | Reduce fluid absorption | Improve potency of local anesthesia | Reduce force needed to dilate cervix

Risks (rare): Bradycardia | Hypotension or increased BP | Cardiac arrest

No evidence for optimal dose

One regimen cited in literature (see 'Learn More – Primary Sources' below): 20 mL dilute vasopressin solution (4U of 0.05 U/mL in 80 mL normal saline)

## **LOCATION**

### **OFFICE HYSTEROSCOPY**

- Diagnostic or minor operative
- Should be considered for the treatment of endometrial polyps
- OPERATING ROOM HYSTEROSCOPY
- Use for patients with
- Cervical stenosis
- Medical comorbidities (e.g., cardiopulmonary disease)
- Significant uterine pathology
- High levels of anxiety
- Previously failed or not tolerated office hysteroscopy

**DISTENTION MEDIUM**

CO<sub>2</sub> GAS

Clear view of cavity and easy equipment maintenance

Limit flow to 100 mL/min

Maintain intrauterine pressure to <100 mm Hg

Use hysteroscopic (not laparoscopic) insufflator

ELECTROLYTE POOR FLUIDS

Glycine 1.5% | Sorbitol 3% | Mannitol 5%

Use for

Operative hysteroscopy

Monopolar devices

Radio-frequency energy devices

Caution: Excessive absorption associated with

Hyponatremia | Decreased serum osmolality | Hyperammonemia

Can lead to seizures and mortality

Note: Mannitol 5% is iso-osmolar and while may cause hyponatremia, should not decrease serum osmolality

ELECTROLYTE-CONTAINING FLUIDS

Normal saline | Lactated Ringer's solution

Use for

Diagnostic cases

Laser | Bipolar | Mechanical energy

Less risk of hyponatremia/ decreased osmolality

**COMPLICATIONS**

1. Vasovagal

Signs and symptoms

Hypotension | Bradycardia

Sweating | Pallor | Loss of consciousness | Nausea and vomiting

Management

Assess: Vitals | Airway, Breathing, Circulation

Place patient in Trendelenburg or raise legs

If bradycardia does not resolve

Atropine: Single dose 0.5 mg IV q3 to 5 minutes (total dose 3 mg)

## 2. Fluid Overload and Hyponatremia

### Prevention

Strictly monitor both IV hydration and hysteroscopic fluid deficit

Electrolyte poor fluids maximal deficit: 1000 mL (in healthy individuals)

Consider stopping procedure at 750 mL deficit

Electrolyte-containing fluids maximal deficit: 2500 mL (in healthy individuals)

Consider stopping procedure at 2000 mL deficit

Consider lower thresholds for elderly, cardiovascular or renal comorbidity or when laboratory services/ acute care options are limited

### Management

Hypertonic saline solution and diuretics (e.g., furosemide)

Increase serum sodium levels by 1 to 2 mEq/L/h

Caution: Do not increase by more than 12 mEq/L in the first 24 hours

Transfer to an urgent care facility and further consultation may be required

## 3. Hemorrhage

### Management

Apply electrosurgical coagulation if bleeding sites identified

Inject vasopressin into the cervix

Use Foley catheter balloon tamponade or manual uterine compression

Surgical approach as a last resort includes

Laparoscopic suturing of perforation

Hysterectomy

Uterine artery embolization

#### 4. Uterine Perforation

##### Prevention

Perform careful pelvic exam prior to hysteroscopy

Use ultrasound guidance as needed

If flexible hysteroscope available, insertion may be performed prior to using dilators

##### Management

Midline perforation is seldom morbid unless laser or electrosurgery is used

Lateral perforations carry risk for retroperitoneal hematomas

Discontinue hysteroscopy if perforation occurs

Consider laparoscopy to

Identify any bowel/ bladder injury

Check for hematomas

#### 5. Air/CO2 Embolization

##### Prevention

Purge and flush air from tubing prior to procedure and whenever bags are changed | Avoid repetitive instrument insertions | Limit intrauterine pressure

Worrisome symptoms include

Dyspnea | Chest pain | Decreased O2 saturation | 'mill wheel' heart murmur | Hypotension | Cardiac arrhythmia (e.g., tachycardia/bradycardia)

##### Management

Terminate procedure

Deflate uterine cavity

Eliminate sources of fluid and gas

Position in left lateral decubitus with Trendelenburg position (Durnat's maneuver)

# OUTPATIENT HYSTEROSCOPY

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## **Objective:**

The aim of this guideline is to provide clinicians with up-to-date, evidence-based information regarding outpatient hysteroscopy, with particular reference to minimising pain and optimising the woman's experience.

## **Introduction:**

Advances in endoscopic technology and ancillary instrumentation have facilitated the development of operative hysteroscopic procedures in an outpatient setting with or without the use of local anaesthesia. Common procedures include endometrial polypectomy, removal of small submucous fibroids, endometrial ablation, removal of lost intrauterine devices and transcervical sterilisation.

The British Society for Gynaecological Endoscopy published in December 2018 that, "Diagnostic hysteroscopy is a commonly performed investigation; it is safe and of short duration. Most women are able to have the procedure in an outpatient setting, with or without local anaesthesia, and find it convenient and acceptable. It is important that the procedure is stopped if a



woman finds the outpatient experience too painful for it to be continued. This may be at the request of the patient or nursing staff in attendance, or at the discretion of the clinician performing the investigation."

### **Executive summary of recommendations**

#### **Service provision**

- All gynaecology units should provide a dedicated outpatient hysteroscopy service to aid management of women with abnormal uterine bleeding. There are clinical and economic benefits associated with this type of service.(level A evidence).
- Outpatient hysteroscopy should be conducted outside of the formal operating theatre setting in an appropriately sized, equipped and staffed treatment room with adjoining, private changing facilities and toilet. This may be a dedicated hysteroscopy suite or a multi-purpose facility.
- The healthcare professional should have the necessary skills and expertise to carry out hysteroscopy.
- There should be a nurse chaperone regardless of the gender of the clinician.
- Written patient information should be provided before the appointment and consent for the procedure should be taken

#### **Analgesia**

- Opiate analgesia before outpatient hysteroscopy should be avoided.(level B evidence).

- Women without contraindications should be advised to consider taking standard doses of non-steroidal anti-inflammatory agents (NSAIDs) around 1 hour before their scheduled outpatient hysteroscopy appointment with the aim of reducing pain in the immediate postoperative period.(Level B evidence).

**Type of hysteroscope**

- Miniature hysteroscopes (2.7 mm with a 3–3.5 mm sheath) should be used for diagnostic outpatient hysteroscopy as they significantly reduce the discomfort experienced by the woman.(Level A evidence).
- Flexible hysteroscopes are associated with less pain during outpatient hysteroscopy compared with rigid hysteroscopes. However, rigid hysteroscopes may provide better images, fewer failed procedures, quicker examination time and reduced cost. Choice of hysteroscope should be left to the discretion of the operator.(level B evidence).

**Distension medium**

- Operative outpatient hysteroscopy, using bipolar electrosurgery, requires the use of normal saline to act as both the distension and conducting medium.

**Cervical dilatation.**

- Routine administration of intracervical or paracervical local anaesthetic is not indicated to reduce the incidence of vasovagal reactions.(Level A evidence).
- Miniaturisation of hysteroscopes and increasing use of the vaginoscopic technique may diminish any advantage of intracervical or paracervical anaesthesia. Routine administration of intracervical or paracervical local anaesthetic should be used where larger diameter hysteroscopes are being employed (outer diameter greater than 5mm) and where the need for cervical dilatation is anticipated (e.g. cervical stenosis), particularly in post menopausal women.

- Routine cervical dilatation is associated with pain, vasovagal reactions and uterine trauma and should be avoided.(level C evidence).
- Instillation of local anaesthetic into the cervical canal does not reduce pain during diagnostic outpatient hysteroscopy but may reduce the incidence of vasovagal reactions.(Level A evidence).
- Topical application of local anaesthetic to the ectocervix should be considered where application of a cervical tenaculum is necessary. Application of local anaesthetic into or around the cervix is associated with a reduction of the pain experienced during outpatient diagnostic hysteroscopy. Consideration should be given to the routine administration of intracervical or paracervical local anaesthetic, particularly in postmenopausal women.(Level A evidence).

**Conscious sedation**

- Conscious sedation should not be routinely used in outpatient hysteroscopic procedures as it confers no advantage in terms of pain control and the woman's satisfaction over local anaesthesia.(Level A evidence).

**Vaginoscopy**

- Vaginoscopy reduces pain during diagnostic rigid outpatient hysteroscopy.(Level A evidence). Vaginoscopy should be the standard technique for outpatient hysteroscopy, especially where successful insertion of a vaginal speculum is anticipated to be difficult and where blind endometrial biopsy is not required.

## **KSOGA SKILL TRANSFER PROGRAM** **AT HOTEL NAVEEN HUBBALI**





THE SKILL TRANSFER PROGRAM WAS ATTENDED BY 70 DELEGATES.THERE WERE FOUR STATIONS DEDICATED FOR LAPAROSCOPIC SUTURING ,TWO HYSTEROSCOPIC SIMULATOR,ONE FERTILATOR TO TRAIN OVUM PICKUP AND ONE FOR INBAG MORCELLATOR.







### Davanagere



### Bengaluru



**For Private Circulation only**



**MANGALORE**





## KSOGA SKILL TRANSFER PROGRAM AT HOTEL NAVEEN HUBBALLI.







**For Private Circulation only**