AGL 2022

51st GLOBAL CONGRESS ON MIGS

December 1–4, 2022 | Gaylord Rockies Resort and Convention Center | Aurora, Colorado

SYLLABUS

Surgical Tutorial 1: Asherman's Syndrome

SCIENTIFIC PROGRAM CHAIR
ANDREW I. SOKOL, MD

HONORARY CHAIR
CHARLES MILLER, MD

PRESIDENT
MAURICIO S. ABRÃO, MD, PHD

Table of Contents

Disclosure of Relevant Financial Relationships

As an ACCME accredited provider, AAGL must ensure balance, independence, and objectivity in all CME activities to promote improvements in health care and not proprietary interests of an ineligible company. AAGL controls all decisions related to identification of CME needs, determination of educational objectives, selection and presentation of content, selection of all persons in a position to control content, selection of educational methods, and evaluation of the activity. Course chairs, planning committee members, faculty, authors, moderators, and others in a position to control the content of this activity are required to disclose all financial relationships with ineligible companies. All relevant financial relationships are appropriately mitigated, and peer review is completed by reviewers who have nothing to disclose. Learners can assess the potential for commercial bias when disclosure, mitigation of conflicts of interest, and acknowledgment of commercial support are provided prior to the activity. Informed learners are the final safeguards in assuring that a CME activity is independent from commercial bias. We believe this mechanism contributes to the transparency and accountability of CME.

Asterisk (*) denotes no financial relationships to disclose.

PLANNER DISCLOSURE

The following members of AAGL have been involved in the educational planning and/or review of this course (listed in alphabetical order by last name).

Linda J. Bell, Admin Support, AAGL*
Linda D. Bradley, MD, Medical Director, AAGL*
Erin T. Carey, MD, MSCR
Honorarium: Med IQ
Research Funding: Eximis
Mark W. Dassel, MD*
Linda Michels, Executive Director, AAGL*
Vadim Morozov, MD
Speaker: AbbVie
Consultant: Medtronic, Lumenis
Erinn M. Myers, MD
Speakers Bureau: Intuitive Surgical
Amy J. Park, MD
Speaker: Allergan
Nancy Williams, COO, CME Consultants*
Harold Y. Wu, MD*
Prof. Jude E. Okohue*

SCIENTIFIC PROGRAM COMMITTEE

Andrew I. Sokol, MD - Medical Legal Defense: Johnson & Johnson
Angela Chaudhari, MD - Consultant: Johnson & Johnson Cara R. King, DO*
Mario Malzoni, MD – Consultant: KARL STORZ
Jessica Opoku-Anane, MD, MS – Consultant: Boston Scientific; Myovant Sciences; AbbVie
Shailesh P. Puntambekar, MD, PHD*
Frank F. Tu, MD, MPH*
Jonathon M. Solnik, MD – Consultant: Olympus; Medtronic; Stockholder: Field Trip Health, Inc.; Felix Health
Linda D. Bradley, MD, Medical Director*
Linda Michels, Executive Director, AAGL*

FACULTY DISCLOSURE

The following have agreed to provide verbal disclosure of their relationships prior to their presentations. They have also agreed to support their presentations and clinical recommendations with the "best available evidence" from medical literature (in alphabetical order by last name).

Miriam Hanstede, MD *
Prof. Jude E. Okohue*
James Robinson, MD, MS*

Surgical Tutorial 1: Asherman's Syndrome

Chair: Professor, Jude Ehiabhi Okohue

Faculty: Miriam M.F.Hanstede, MD and James K. Robinson, MD, MS

Course Description

Asherman's syndrome is a rare condition in resource-rich countries. Unfortunately, it is common in developing countries, especially those with restrictive abortion laws. This makes hysteroscopic adhesiolysis a common procedure in such environments. For this reason, practitioners have, over time, developed tricks and tips for performing Asherman's syndrome surgery in an outpatient clinic setting. While showcasing numerous videos of some of the most challenging cases, the various tips and tricks for ensuring a successful outcome will be shown and discussed. The course will commence with didactic lectures on Asherman's Syndrome delivered by renowned experts. This will be followed by videos explaining the basics of hysteroscopic adhesiolysis for beginners and the advanced hysteroscopist. Finally, a step-by-step approach to entry into the difficult uterine cavity, real cases where complications occurred, and tips on how to prevent such complications will be presented.

Learning Objectives

At the conclusion of this course, the participants will be able to: 1) 1) Cite the etiopathogenesis of, and diagnose, Asherman's syndrome; 2) Utilize tricks learned on how to navigate a difficult cavity in cases of severe Asherman's syndrome; and 3) Recognize the incidence of uterine perforation and employ steps in preventing a perforation.

Course Outline

11:30 am	Welcome, Introduction and Course Overview	J.E. Okohue
11:35 am	Etiopathogenesis of Asherman's Syndrome	J.K. Robinson
11:45 am	Asherman's Syndrome: Current Perspectives on Diagnosis	M.M.F. Hanstede
12:00 pm	Navigating a Difficult Cavity: Video Demonstrations on Tricks and Tips, Including Complications	J.E. Okohue
12:20 pm	Questions & Answers	All Faculty
12:30 pm	Adjourn	

MedStar Health

It's how we treat people.

December 2, 2022

James Robinson, MD, MS, FACOG
Vice Chair, Women's and Infants' Services
Director, Minimally Invasive Gynecologic Surgery
Associate Program Director, AAGL FMIGS
MedStar Washington Hospital Center

None

Objectives

Etiology	Prevalence	Pathogenesis
Participants will explain the risk factors that lead to the development of intrauterine adhesions	Participants will be able to quote the prevalence of intrauterine adhesions following certain antecedent procedures	Participants will summarize a basic framework for the pathogenesis of intrauterine adhesions

Asherman Syndrome is defined by the presence of intrauterine adhesions or adhesions in the endocervix with consequent risk of hypomenorrhea/amenorrhea, reduced fertility, pregnancy loss and abnormal placentation.

Definition

History

Heinrich Fritsch
- 1st description of amenorrhea following postpartum curettage
- Trained Hermann Pfannenstiel

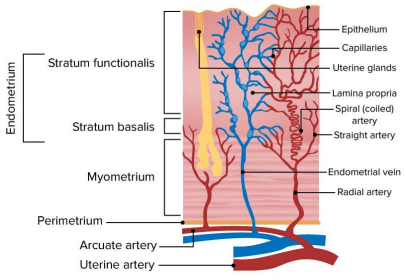
1894

1946 and 1950

Joseph Asherman
- Amenorrhea Traumatica
- 1st to fully describe the syndrome, frequency, and early understanding of the etiopathogenesis

Etiology

- Injury to the endometrial Stratum Baslis



Etiology – Endometrial Injury

Curettage

- Endometrial curettage with either sharp or suction curette
- Myomectomy and uterine repair

Thermal Injury

- Endometrial Ablation
- Hysteroscopic laser or radiofrequency surgery

Etiology - Infection

Uterine Tuberculosis

- 1st described as an etiology by Netter et al in 1956
- Most common cause of IUAs in endemic populations

Schistosomiasis

- Parasitic cause in endemic population

Endometritis?

Genital Tuberculosis

Etiology - Radiation

Cervical cancer patients who under-go chemoradiation are at risk of developing IUAs

Prevalence

Relation between risk factors and frequency of occurrence of IUAs

Risk Factors	Frequency (%)
Miscarriage curettage	**66.7 (more likely mild)**
Postpartum curettage	**21.5 (more likely severe)**
Caesarean section	2
Trophoblastic disease evacuation	0.6
Mullerian duct malformation	16
Infection (genital tuberculosis)	4
Diagnostic curettage	1.6
Abdominal myomectomy	1.3
Uterine artery embolization	14
Hysteroscopic surgery: metroplasty	6
Insertion of IUCD	0.2
Uterine compressive sutures for PPH	18.5
Hysteroscopic surgeries	
Metroplasty	6
Myomectomy (single myoma)	**31.3**
Myomectomy (multiple myomas)	**45.5**
Endometrial ablation	36.4
Polypectomy	0.3
Septoplasty	6.7

Yu D, Wong YM, Cheong Y, Xia E, Li TC. Asherman syndrome—

Prevalence

Table 1. Reported incidence of intrauterine adhesion following various conditions and procedures

Condition	Procedure	Incidence	Reference
Gravid			
SAB	Suction D&C	1.5% 19%	Gilman *et al.* [6•] Hooker *et al.* [7]
First trimester TOP	Suction D&C	21%	Hooker *et al.* [8]
Retained POC[a]	Hysteroscopic resection	6% 13% 19%	Smorgick *et al.* [9] Hooker *et al.* [10] Barel *et al.* [11]
	Suction D&C	30%	Hooker *et al.* [10]
Gynaecologic			
Septum	Hysteroscopic septum resection (bipolar)	24%	Yu *et al.* [12••]
Fibroids	Hysteroscopic myomectomy (bipolar) Abdominal myomectomy	8% 22%	Touboul *et al.* [13] Bhandari *et al.* [14••]

Salazar CA, Isaacson K, Morris S. A comprehensive review of Asherman's syndrome: causes, symptoms and treatment options. Curr Opin Obstet Gynecol. 2017;29(4):249–56.

Prevalence

In regions where tuberculosis is not endemic, up to 90% of cases follow pregnancy associated uterine trauma

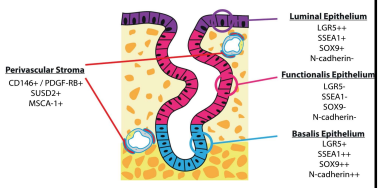
In regions where tuberculosis is endemic up to 50% of cases likely result from infection

Pathogenesis - Endometrial Info

Endometrium = Epithelium and Mesenchyme/Stroma

- The epithelium is categorized by **glandular** (GE) and **luminal** epithelium (LE), which are the majority of the functionalis layer but the minority of the basalis layer; the basalis mostly comprises stroma and harbors most of the endogenous stem cells.
- In Asherman syndrome, the LE is largely lost, the stroma is replaced by fibrous tissue, and the endometrium thins and loses responsiveness to estrogen and progesterone

Endometrial cells and layers



Pathogenesis

Fibrosis occurs in the damaged endometrium without adequate self-repair

limited understanding of IUA pathogenesis and the normal repair mechanism → Limits → targeted methods to efficiently promote the regeneration of endometrium

The study on IUA pathogenesis should be the basis of the development of new prevention and treatment methods for IUA.

Methodology for Current Tissue-Based IUA Pathogenesis Research

Endometrium tissue of IUA patients/animal models

Normal endometrium tissue of human/laboratory animals

↓

Compared the expression level of some molecules or their expression profiles

↓

Found out the differentially expressed molecules (TGF-β, Smad3, Smad7, Collagen, miR-29b, etc.)

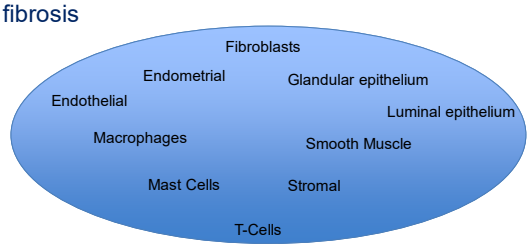
↓

Conclusion/inference: these molecules are involved in IUA pathogenesis

Identify differences in expression of different proteins, micro-RNAs, and mRNAs between endometrial tissue samples in subjects with IUAs and controls without IUAs

Uterine Cell Heterogeneity

Single Cell Sequencing has identified numerous uterine cell types, each with their own distinct potential molecular impact on the development of fibrosis



Insufficient Cell Plasticity Model

- We hypothesize that in the injured endometrium, insufficient functional cell renewal capacity will lead to exposure of the wound to pathogens and dead cells, infiltrating immune cells and other effector cells, and ultimately steer the emergent response of a large amount of extracellular matrix secreted to seal the wound, thus forming IUA. Similar phenomena have been observed in cardiac, hepatic, renal, and pulmonary fibrosis [32]

Cellular Communication

Endometrial cells do not appear to communicate well with surrounding cells.

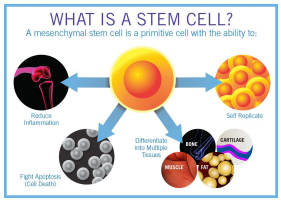
When injury occurs, other cells get limited information limiting dedifferentiation and transdifferentiation into new endometrial cells

In contrast endothelial cells communicate well with surrounding cells such a fibroblasts which are rapidly recruited to the site of injury.

This can lead to disintegration of microvascular structures and closely packed epithelial tissues

This process is analogous to the development of atherosclerotic plaques

Stem Cells

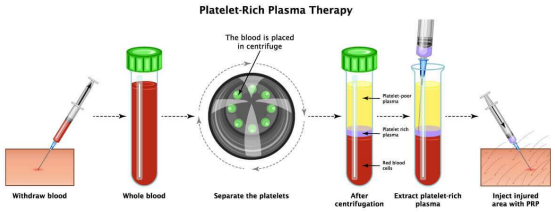


- Stem cells have the potential to differentiate into more mature cells and self-replicate into daughter cells.
- Stem cells exert tissue trophic support, self-renewal, regeneration of endogenous cells, immunosuppression, regulatory interactions, and paracrine signaling with endogenous cells.
- Mesenchymal stem cells (MSC) used in regenerative medicine are multipotent and can differentiate into a confined number of cell types limited to the same lineage.

Regenerative Medicine with Stem Cells

- Autologous bone marrow intrauterine stem cell transplant
- Autologous menstrual blood intrauterine stem cell transplant
- Amniotic stem cell transplant
- Placental derived stem cell transplant
- Umbilical cord derived stem cell
- Adipose derived

Platelet-rich plasma (PRP) is produced by centrifuging the patient's blood, to obtain a concentration of platelets 4–5 times above normal value. Since it is prepared from autologous blood, risks for disease transmission, immunogenic reactions, or cancers are minimal. It has been extensively used to support tissue growth and repair in orthopedics, dermatology, dental and aesthetic surgery.



Regenerative Medicine with Platelet Rich Plasma (PRP)

- Numerous studies have demonstrated increased endometrial growth in women with thin endometrium undergoing IVF after intrauterine PRP
- 1 study demonstrated increased subendometrial and endometrial blood flow in women after IU PRP
- One case report in Asherman Syndrome

Summary

- Intrauterine adhesions occur following injury to the endometrial basalis layer
- Endometrial curettage around the time of pregnancy and tuberculosis are the 2 most common etiologic factors
- The mechanisms of pathogenesis are complex and incompletely understood
- Fibrosis replaces normal endometrium which has limited self-repair capabilities
- stem cell therapy and platelet rich plasma may lead to improved outcomes

Selected References

Asherman JG. Amenorrhoea traumatica. J Obstet Gynaecol Br Emp 1948; 55: 23–30.

Asherman JG. Traumatic intrauterine adhesions. Br J Obstet Gynaecol 1950; 57: 892–6.

Hanstede MMF, van der Meij E, Goedemans L, Emanuel MH. Results of centralized Asherman surgery, 2003–2013. Fertil Steril 2015; 104:1561–1568.

Bhandari S, Ganguly I, Agarwal P, et al. Effect of myomectomy on endometrial cavity: a prospective study of 51 cases. J Hum Reprod Sci 2016; 9:107–111.

Touboul C, Fernandez H, Deffieux X, et al. Uterine synechiae after bipolar hysteroscopic resection of submucosal myomas in patients with infertility. Fertil Steril 2009; 92:1690–1693.

Sonnier L, Torre A, Broux P, et al. Evaluation of fertility after operative hysteroscopy to remove retained products of conception. Eur J Obstet Gynecol Reprod Biol 2017; 211:98–102.

Chang Y, Li J, Chen Y, Wei L, Yang X, Shi Y, Liang X (2015) Autologous platelet-rich plasma promotes endometrial growth and improves pregnancy outcome during in vitro fertilization. Int J Clin Exp Med 8(1):1286–1290

Sardana D, Upadhyay AJ, Deepika K, Pranesh GT, Rao KA (2014) Correlation of subendometrial-endometrial blood flow assessment by two-dimensional power Doppler with pregnancy outcome in frozen-thawed embryo transfer cycles. J Hum Reprod Sci 7(2):130–135.

Selected References - Continued

*Krolikowski A, Janowski K, Larsen JV (May 1995). "Asherman syndrome caused by schistosomiasis". Obstetrics and Gynecology. **85** (5 Pt 2): 898-899.*

Longo DL, Rockey DC, Bell PD, Hill JA. Fibrosis—a common pathway to organ injury and failure. N Engl J Med. 372:1138–49.

Salazar CA, Isaacson K, Morris S. A comprehensive review of Asherman's syndrome: causes, symptoms and treatment options. Curr Opin Obstet Gynecol. 2017;29(4):249–56.

Yu D, Wong YM, Cheong Y, Xia E, Li TC. Asherman syndrome—one century later. Fertil Steril. 2008;89(4):759–79.

Schenker JG, Margalioth EJ. Intrauterine adhesions: an updated appraisal. *Fertil Steril.* 1982;**37**(5):595–610.

Netter AP, Musset R, Lambert A et al. Traumatic uterine synechiae: a common cause of menstrual insufficiency, sterility and abortion. Am J Obstet Gynecol 1956; 71: 368.

Thank you

It's how we treat people.

MedStar Health

Surgical Tutorial 1
Asherman's Syndrome

Current perspective and Diagnosis

Miriam Hanstede, M.D.
Spaarne Gasthuis
The Netherlands

AAGL 2022 51st GLOBAL CONGRESS ON MIGS
December 1-4, 2022 | Aurora, CO | congress.aagl.org

Disclosure

"**I have no financial relationships to disclose**"

Objectives

- How to diagnose clinical relevant intra uterine adhesions
- How to classify IUA
- To understand the reason for high obstetrical care
- To be able to reproduce the prevention options

Spaarne Gasthuis

Hysteroscopic Training Center
Spaarne Gasthuis,
Haarlem–Amsterdam
The Netherlands

UMC Utrecht



Fritsch
&
Asherman

N=1
1894

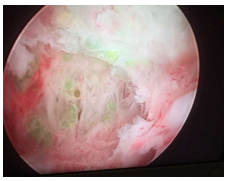
N=29
1948

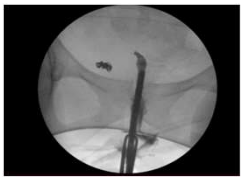
What can cause intra uterine adhesions

		Risk of IUA, n (%) Schenker et al. (1982)[1]	Risk of IUA, n (%) Hanstede et al (2015)[2]
Trauma to the pregnant uterus			
First Trimester	Curettage after miscarriage	1237(66.7)	334(47.2)
	Termination of pregnancy		31(4.4)
	Hydatidform mole	11(0.6)	6(0.8)
Post partum	Post partum curettage	400(21.5)	179(25.3)
	Manuel removal of placenta (MRP)		20(2.8)
	MRP and curettage		43(6.1)
	Cesarean section	38(2.0)	23(3.3)
	Uterine artery embolization post-partum		1(0.1)
	Post partum uterine compressive sutures		
Trauma to the non pregnant uterus			
	Endometrial ablation		27(3.8)
	Hysteroscopic myomectomy		14(2.0)
	Abdominal myomectomy	24(1.3)	2(0.3)
	Diagnostic curettage	1.2	
	Insertion of intrauterine device	3(0.3)	1(0.1)
	Cervical biopsy/polypectomy	10(0.5)	5(0.7)
	Curettage for menorrhagia	8(0.4)	1(0.1)
	Uterine artery embolization		
Without direct trauma to the uterus			
	Not otherwise specified	28(1.5)	8(1.1)
	Intra uterine infection (gravid/nongravid)		6(0.8)
	Genital tuberculosis	74(4)	6(0.8)
Total		1856(100)	707(100)

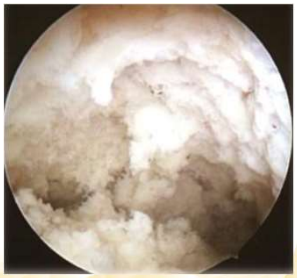
Trauma to the endometrium

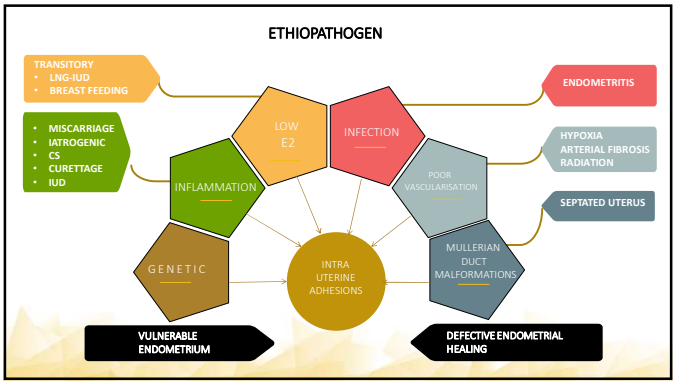
Hypoxia of the endometrium

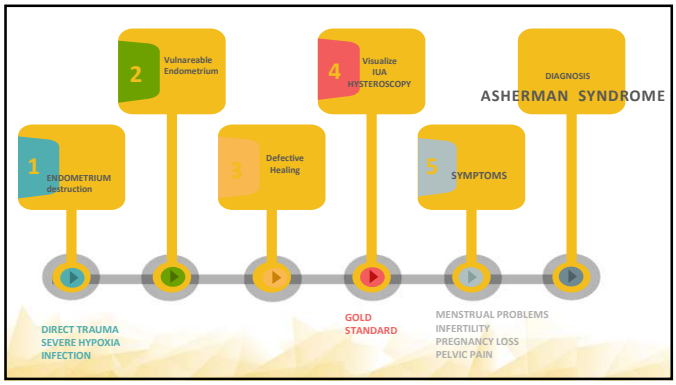


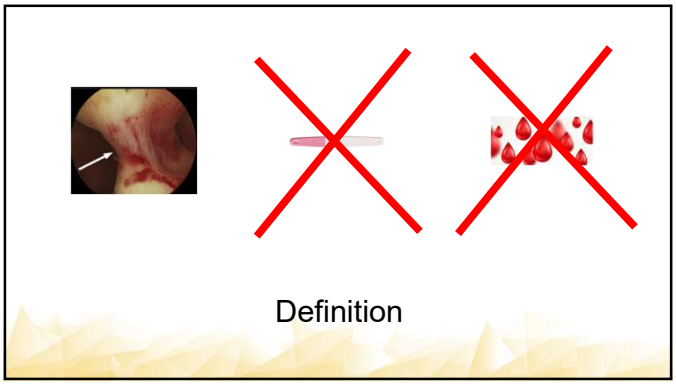


Infection of the endometrium









Classification Systems

- ESGE
- ASF
- March
- And 14 more …..

March

Table 1
Hysteroscopic classification of intrauterine adhesions[a]

Classification	Involvement
Minimal	Less than one-fourth of uterine cavity; thin or filmy adhesions; ostial areas, and upper fundus minimally involved or clear
Moderate	One-fourth to three-fourths of uterine cavity; no agglutination of walls; ostial areas and upper fundus only partially occluded
Severe	More than three-fourths of uterine cavity; agglutination of walls or thick bands; ostial area and upper cavity occluded

ESGE Classification of intra uterine adhesions

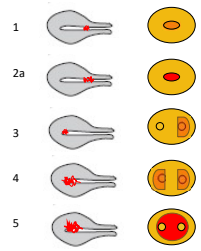
TABLE 3

European Society of Gynecological Endoscopy (ESGE) classification of IUAs (1995 version).

Grade	Extent of intrauterine adhesions[a]
I	**Thin or filmy adhesions** Easily ruptured by hysteroscope sheath alone Cornual areas normal
II	**Singular dense adhesion** Connecting separate areas of the uterine cavity Visualization of both tubal ostia possible Cannot be ruptured by hysteroscope sheath alone
IIa	**Occluding adhesions only in the region of the internal cervical os**[b] Upper uterine cavity normal
III	**Multiple dense adhesions** Connecting separate areas of the uterine cavity Unilateral obliteration of ostial areas of the tubes
IV	**Extensive dense adhesions with (partial) occlusion of the uterine cavity** Both tubal ostial areas (partially) occluded
Va	**Extensive endometrial scarring and fibrosis in combination with grade I or grade II adhesions** With amenorrhea or pronounced hypomenorrhea
Vb	**Extensive endometrial scarring and fibrosis** in combination with grade III or grade IV adhesions[b] With amenorrhea

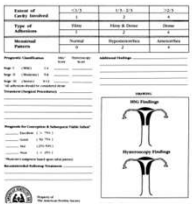
Source: Wamsteker, 1997, Hysteroscopy Training Centre, Spaarne Hospital, Haarlem, The Netherlands. (35)
[a] From findings at hysteroscopy and hysterography.
[b] Only to be classified during hysteroscopic treatment.

ESGE

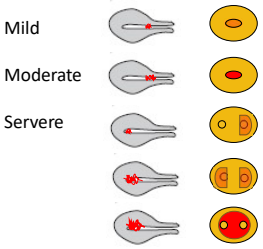


ASF

Classification	Condition		
Cavity involved	<1-3	1/3 - 2/3	>2/3
	1	2	3
Type of adhesions	Filmy	Filmy and Dense	Dense
	1	2	3
Menstrual pattern	Normal	Hypo menorrhea	Amenorrhe
	0	2	4
Prognostic classification		HSG score	Hysterosco score
Stage I (Mild)	1-4		
Stage II (Moderate)	5-8		
Stage III (Severe)	9-12		



ESGE & ASF

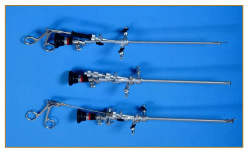


Treatment Options

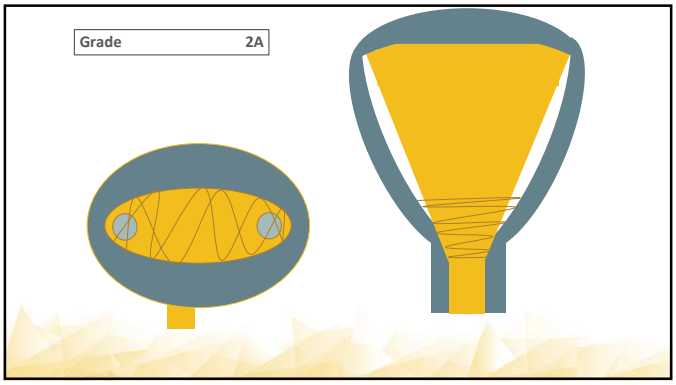
- Hysteroscopy golden standard
- Guidance methods
  - Laparoscopy
  - Ultrasound
  - Fluoroscopy

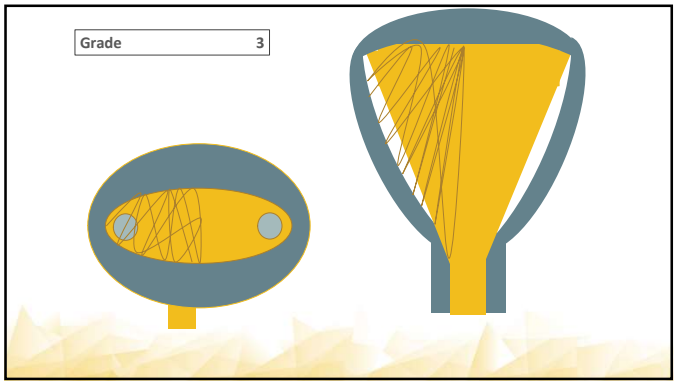
Use A Conventional Hysteroscope

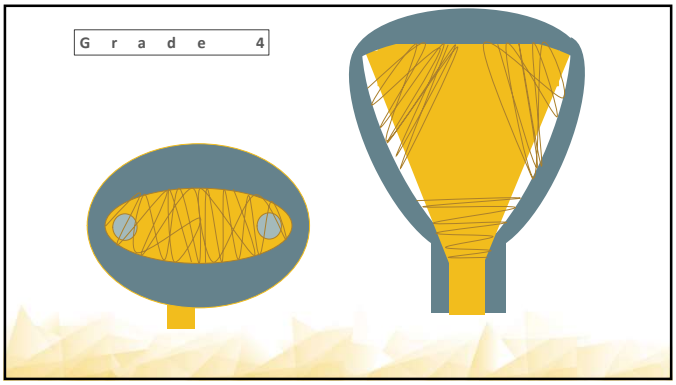
Use Conventional Instruments

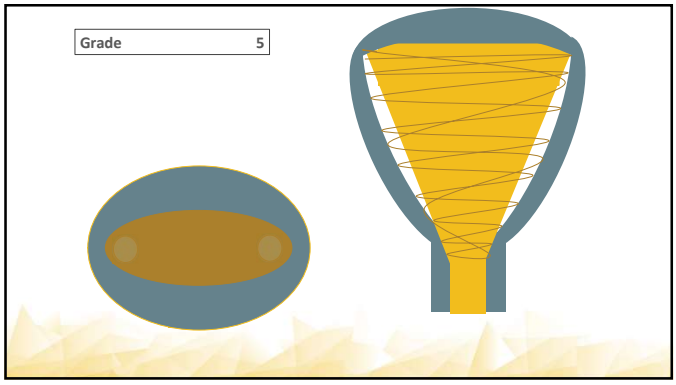


Do not use currency, thermal damage to the endometrium will occur







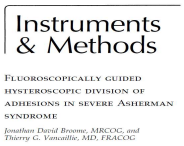


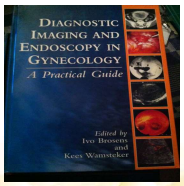
Treatment Asherman Expertise Center

Hysteroscopy with Fluoroscopy → IUD & Hormone schedule → Hysteroscopic control After 2 months

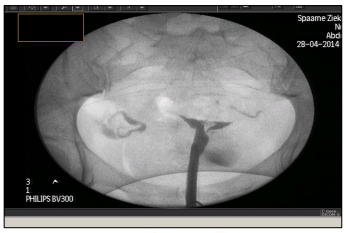
Hysteroscopy with fluoroscopy

- Wamsteker 1990 published 1997
- Broome and Vancaillie published 1999





Fluoroscopy

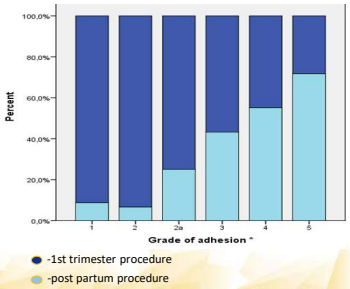


Fluoroscopie

What is know about the outcomes

- After AS surgery
- Short term follow-up
- Long term follow-up
- Obstetrical outcome

Causale Procedure



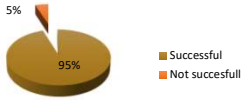
Outcome

Restoring uterine anatomy

Year	Author	n	%
1986	Fedele et al.	31	62.5
1999	Capella-Allouc et al.	31	51.6
2003	Pace et al.	75	93.3
2006	Fernandez et al.	71	43.6
2015	Hanstede	606	98.0

The great challenge with Asherman syndrome patients

- Is not to restore the uterine anatomy and to perform a successful adhesiolysis
- but to prevent the spontaneous recurrence of adhesions



Grade ESGE	%
1,2,2a	20-25
3	30
4,5	39-42

Hanstede M et al. Results of centralized Asherman surgery, 2003-2013. Fertil Steril. 2015 Dec;104(6):1561,1568.

Spontaneous recurrence and grade of

Grade ESGE	%
1	20.8
2	22.7
2a	25
3	29.1
4	38.5
5	41.9

Grade AFS	%
Mild	22.9
Moderate	25
Severe	36.5

Spontaneous recurrence

Year	Author	n	%
1986	Fedele et al.		
1988	Valle and Sciarra	44/187	23.5
1997	Pabuccu et al	8/40	20
1999	Feng et al	10/12	83 severe adhesions
2006	Caplella-Allouc et al.	10/16	62.5
2015	Hanstede	34.8	28.7

Hanstede et al. Recurrence and grade of adhesions

Grade ESGE	%
1	20.8
2	25.0
2a	22.7
3	29.1
4	38.5
5	41.9

Grade AFS	%
Mild	22.9
Moderate	22.7
Severe	36.5

Pregnancy & Live Birth

Table 7
Major obstetric complications after hysteroscopic treatment of intrauterine adhesions*

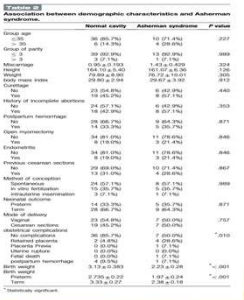
Source	Pregnancy, %	Miscarriage, %	Live birth, %	Obstetric complications
Friedman et al [125]	24/30 (80)	1/24 (4)	23/24 (96)	Placenta increta (n = 1), exuterine sacculation (n = 1), paper-thin uterine fundus (n = 1)
Valle and Sciarra [52]	143/187 (76)	26/143 (18)	114/143 (80)	Placenta accreta requiring hysterectomy (n = 1), ectopic pregnancy, 2%
Deaton et al [112]	1/1 (100)	0/1 (0)	1/1 (100)	Spontaneous uterine rupture at 25 weeks, cesarean hysterectomy because of uncontrolled bleeding
Hulka [113]	1/1 (100)	0/1 (0)	1/1 (100)	Uterine rupture in pregnancy
Roge et al [119]	28/52 (54)	10/28 (36)	18/28 (64)	Partial placenta accreta (n = 2)
Katz et al [117]	66/72 (92)	15/66 (23)	46/72 (64)	Perinatal death (baby) after premature delivery
McComb and Wagner [72]	5/6 (83)	1/5 (20)	4/5 (80)	Placenta previa (n = 1)
Protopapas et al [71]	3/7 (43)	1/3 (33)	2/3 (67)	Hysterectomy because of placenta accreta
Capella-Allouc et al [61]	12/28 (43)	5/15 (33)	9/15 (60)	Abnormal placenta (n = 2)
Feng et al [108]	156/186 (84)	11/156 (7)	145/156 (92.9)	Abnormal placenta (n = 4)
Zikopolous [67]	20/46 (43)	NA	20/20 (100)	Hysterectomy because of placenta accreta (n = 2)
Shiau et al [122]	1/1 (100)	0/1 (0)	1/1 (100)	Uterine rupture in subsequent pregnancy
Yu et al [124]	39/85 (46)	5/39 (13)	27/39 (69)	Cesarean hysterectomy because of placenta accreta (n = 2), manual removal (n = 3)
Thompson et al [59]	9/17 (53)	1/9 (11)	8/9 (89)	Bleeding requiring cesarean hysterectomy (n = 1)

NA = data not available.
* Data are given as No. (%).

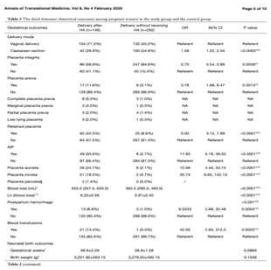
Pregnancy outcome after adhesiolysis

		Total group	At least one life birth	No life birth	P value
Number of patients (n)		500	336(67.2)	164 (32.8)	
At least one life birth before Occurrence of AS	Yes	305	190(62.3)	115(37.7)	0.000
	No	195	146(74.9)	49(25.1)	
At least one miscarriage before Occurrence of AS	Yes	370	265(71.6)	105(28.4)	0.000
	No	130	71(54.6)	59(45.4)	
Asherman classification ESGE	Grade1	16	13 (81.2)	3 (18.8)	0.000
	Grade 2	15	12(80.0)	3 (20.0)	
	Grade 2a	183	137 (74.9)	46 (25.1)	
	Grade 3	183	118 (64.5)	65 (35.5)	
	Grade4	74	44 (59.5)	30 (40.5)	
	Grade 5	29	12 (41.4)	17 (58.6)	
Asherman classification ASF	Mild	31	25 (80.6)	6 (19.4)	0.000
	Moderate	183	137 (74.9)	46 (25.1)	
	Severe	286	174 (60.8)	112 (39.2)	
Putative cause of Asherman syndrome	First trimester procedure	327	241 (73.7)	86 (26.3)	0.000
	Post partum procedure	173	95 (54.9)	78 (45.1)	
Spontaneous recurrence of IUAs after adhesiolysis	Yes	171	104 (60.8)	67 (39.2)	0.431
	No	317	232 (73.2)	85 (26.8)	
	No complete resection	12	0 (0)	12 (100)	
At least one miscarriage after adhesiolysis	Yes	148	78 (52.7)	70 (47.3)	0.000
	No	352	258 (73.3)	94 (26.7)	

Baradwan S, Baradwan A, Bashir M, Al-Jaroudi D. The birth weight in pregnant women with Asherman syndrome compared to normal intrauterine cavity: A case-control study. *Medicine (Baltimore)*. 2018;97(32)



Feng Q, Gao B, Huang H, et al. Obstetrical outcome in the third trimester after hysteroscopic adhesiolysis. *Ann Transl Med*. 2020;8(4):51.



Obstetrical complication

	Hanstede Number (n (%))	Baradwan Number (n (%))	Fang Number (n (%))
Total number of women, n (%)	348 (100)	14 (100)	146 (100)
Pregnancy Complications • **Yes** • **No** • Unknown	71 (21.8) 255 (78.2) 22	5 (35.7) 9 (64.3)	Not reported
Placenta Implantation problems • **Yes** • **No** • Unknown	63 (19.2) 263 (80.7) 22	2 (14.2)	49 (33.6)
Post partum problem • **Yes** • **No** • Unknown	133 (40.8) 193 (59.2) 22	5 (35.7) 9 (64.3)	62 (42.5)

Premature Deliveries

GRADE OF ADHESIONS
MILD/MODERATE VS. SEVERE
1.74 (1.02-2.96)
P 0.041

SPONTANEOUS RECURRENCE OF ADHESIONS
1.68 (1.01-2.79)
P 0.045

Abnormal Invasive Placenta

1ST TRIMESTER PROCEDURE
LESS RISK OF AIP

POST PARTUM PROCEDURES
2.69 (1.54-4.69) P <0.001

Post Partum problems

SEVERE ADHESIES
1.64 (1.01-2.69) P 0.048

POST PARTUM PROCEDURES
2.49 (1.35-4.26) P 0.004

Prevention

- PRIMARY, prevention of intentional treatment
- SECUNDARY, prevention of formation of intra uterine adhesions after intentional treatment
- TERTIARY, prevention of recurrence of adhesions

Primary Prevention AS

1st trimester Treatment	Year	author
Expective management	1997	Blohm et al.
	2009	Smith et al.
Misoprostol treatment	2017	Kim et al. Cochrane review
	2018	WHO Geneva
Delayed-surgical treatment	2008	Adoni et al.
Hysteroscopic treatment	2014 2011 2001	Ben-Ami et al . Rein et al. Cohen et al.

Post partum Treatment	Year	author
Hysteroscopic treatment	2013	Hamerlynck et al.
	2001	Cohen et al.
Delayed-surgical treatment	2008	Adoni et al.
Expective management	...	
Non-surgical treatment	...	

Secondary Prevention

1st trimester Treatment	Year	author
Hylaluronic acid gel after dilation and curettage in women with at least one previous curettage	2017	Hooker

Post partum	Year	author
Discontinuation of Breastfeeding	1977	Buttram and Turati
Curettage with ultrasound guidance	2009	Wolman et al.

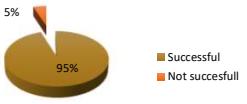
Tertiary prevention

Treatment	Year	author
Intermittent intra uterine balloon dilatation therapy	2019	Shi et al.
Adjuvant Hormones	2020	Hanstede et al.
Anti-adhesion barriers	2013	Lin et al.
Cu-IUD	2015	Lin et al.
Intra uterine balloon (folley balloon, intra uterine suitable balloon)	2018	Zhu et al.
Early intervention second look office hysteroscopy	2013	Li et al.
Stemm cells	2018	Aziz et al.
Amnion graft	2018 2017	Zheng et al Gan et al.
Oral mucosal epithelial cell sheets	2015	Kuramoto et al.
Biomimetic Endometrium Interfaces	2020	Qixin et al.

Why this study

The great challenge with Asherman syndrome patients

- Is not to restore the uterine anatomy and to perform a successful adhesiolysis
- but to prevent the spontaneous recurrence of adhesions



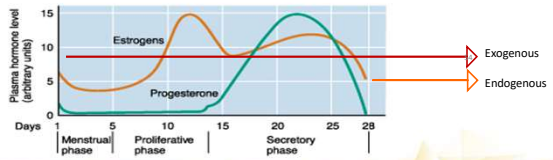
Grade ESGE	%
1,2,2a	20-25
3	30
4,5	39-42

Hanstede M et al. Results of centralized Asherman surgery, 2003-2013. Fertil Steril. 2015 Dec;104(6):1561,1568.

OBJECTIVE

Estrogen stimulates endometrial development, stimulates regeneration of endometrium and promoting re-epithelialisation of the scarred surface after adhesiolysis

- What works better endogenous or exogenous hormones?



References

- 1 Schenker JG, Margalioth EJ. Intrauterine adhesions: an updated appraisal. Fertil Steril. 1982;37:593–610
- 2 Hanstede MMF, van der Meij E, Goedemans L, Emanue MH. Centralized Asherman's surgery 2003-2013: Ferti Steril 2015
- 3 K. Wamsteker and S. De Block, "Diagnostic hysteroscopy: technique and documentation," in *Endoscopic Surgery for Gynecologists*, C. Sutton and M. Diamond, Eds., pp. 511–524, Saunders, London, UK, 1998.
- 4 American Fertility Society classifications of adnexal adhesions, distal tubal occlusion, tubal occlusion secondary to tubal ligation, tubal pregnancies, mullerian anomalies and intrauterine adhesions. Fertil Steril.1988;49:944–955
- 5 Yu D, Wong Y, Cheong Y, Xia E, Li T. Asherman syndrome: one century later. Fertil Steril, 2008;89. 759–779
- 6 Fedele L, Vercellini P, Viezzoli T, Ricciardiello O, Zamberletti D. Intrauterine adhaesions: current diagnostic and therapeutic trends. Acta Eur Fertil 1986;17:317.
- 7 Capella-Allouc S, Morsad F, Rongieres-Bertrand C, Taylor S, Fernandez H. Hysteroscopic treatment of severe Asherman's syndrome and subsequent fertility. Hum Reprod 1999;14:1230–3.
- 8 Pace S, Stentella P, Catania R, Palazzetti PL, Frega A. Endoscopic treatment of intrauterine adheiosn. Clin Exp Obstet Gynecol 2003;30:26-8.
- 9 Fernandez H, Al Najjar F, Chauvenaud-Lambling et al. (2006). "Fertility after treatment of Asherman's syndrome stage 3 and 4". J Minim Invasive Gynecol 13 (5): 398–402.
- 10 Blohm, F., Hahlin, M., Nielsen, S., Milsim, I., 1997. Fertility after a randomised trial of spontaneous abortion managed by surgical evacuation or expectant treatment. Lancet 349, 995.
- 11 Smith, L.F.P., Ewings, P.D., Quinlan, C., 2009. Incidence of pregnancy after expectant, medical, or surgical management of spontaneous first trimester miscarriage: long term follow-up of miscarriage treatment (MIST) randomised controlled trial. Br. Med.
- 12 Cohen, S.B., Kalter-Ferber, A., Weisz, B.S., Zalel, Y., Seidman, D.S., Mashiach, S., Lidor, A.L., Zolti, M., Goldenberg, M., 2001. Hysteroscopy may be the method of choice for management of residual trophoblastic tissue. J. Am. Assoc. Gynecol. Laparosc. 8, 199–202.
- 13 Wolman, I., Altman, E., Fait, G., Har-Toov, J., Gull, I., Amster, R., Jaffa, A., 2009. Evacuating retained products of conception in the setting of an ultrasound unit. Fertil. Steril. 91, 1586–1588.
- 14 Rein DT, Schmidt T, Hess AP, Volkmer A, Schöndorf T, Breidenbach M. Hysteroscopic management of residual trophoblastic tissue is superior to ultrasound- guided curettage. J Minim Invasive Gynecol. 2011;18(6):774-778.
- 15 Hooker AB, Aydin H, Brölmann HAM, Huirne JAF. Long-term complications and reproductive outcome after the management of retained products of conception: A systematic review. Fertil Steril. 2016;105(1):156-164e2.
- 16 Ben-Ami I, Melcer Y, Smorgick N, Schneider D, Pansky M, Halperin R. A comparison of reproductive outcomes following hysteroscopic management versus dilatation and curettage of retained products of conception. Int J Gynecol Obstet. 2014;127(1):86-89.
- 17 Hamerlynck TWO, Van Vliet HAAM, Beerens A-S, Weyers S, Schoot BC. Hysteroscopic Morcellation Versus Loop Resection for Removal of Placental Remnants: A Randomized Trial. J Minim Invasive Gynecol. 2016;23:1172-1180.
- 18 Liu C, Lu Q, Zhang Z, et al. HyaRegen A randomized controlled trial on the efficacy and safety of a new crosslinked hyaluronan gel in reducing adhesions after gynecologic laparoscopic surgeries. J Minim Invasive Gynecol. 2015;22(5):853–863
- 19 Li X, Wu L, Zhou Y, et al. New crosslinked hyaluronan gel for the prevention of intrauterine adhesions after dilation and curettage in patients with delayed miscarriage: A prospective, multicenter, randomized, controlled trial. J Minim Invasive Gynecol. 2019;26(1):94–99.

#donothesitatetoask!

AAGL 2022
51st GLOBAL CONGRESS ON MIGS
December 1–4, 2022 | Aurora, CO | congress.aagl.org

AAGL 2022
51st GLOBAL CONGRESS ON MIGS
December 1–4, 2022 | Aurora, CO | congress.aagl.org

Navigating a difficult cavity: video demonstrations on tricks and tips, including complications

Prof. Jude E. Okohue
Gynescope Specialist Hospital & Madonna University, Nigeria.
Vice President, Association of Gynaecologcal Endoscopy Surgeons, Nigeria.
Board member, AAGL Hysteroscopy SIG
West African Representative @Global Community of Hysteroscopists.
judosca@yahoo.com

Declaration

I have no financial interest to declare

AAGL 2022
51st GLOBAL CONGRESS ON MIGS
December 1–4, 2022 | Gaylord Rockies Resort and Convention Center | Aurora, CO

Objectives

At the conclusion of this presentation, participants should be able to:

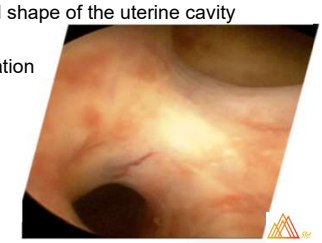
- Apply tricks learned on how to navigate a difficult cavity in cases of moderate/severe Asherman's syndrome
- Recognize uterine perforation and employ steps in preventing a perforation.

Introduction: Aims of Hysteroscopy in Asherman Syndrome

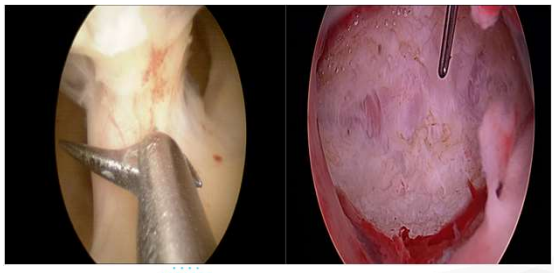
i. Restoring the capacity and shape of the uterine cavity

ii. Restoring proper menstruation

iii. Restoring fertility



Cold Scissors or Energy Device?



Systematic Review and Meta-Analysis

Medicine

OPEN

Cold scissors versus electrosurgery for hysteroscopic adhesiolysis

A meta-analysis

Liuqing Yang, MD, PhD[a], Ling Wang, BM[a,b], Yun Chen, MD, PhD[a], Xiaoshi Guo, MD, PhD[a], Chenyun Miao, MD, PhD[a], Ying Zhao, MD, PhD[a], Lu Li, PhD[a], Qin Zhang, BM[a,*]

Abstract

Background: Intrauterine adhesion seriously affects reproductive health in women. Hysteroscopic adhesiolysis using cold scissors or electrosurgery is the main treatment, although there is no consensus on the preferable method. This review aimed to compare the efficacy and safety of these methods for treating moderate to severe intrauterine adhesion.

Methods: PubMed, EMBASE, MEDLINE, Cochrane Database of Systematic Reviews, Web of Science, Chinese Biomedical Literature Database, and China National Knowledge Infrastructure were searched on April 30, 2020. Randomized controlled trials and observational studies that were published in all languages (must contain English abstracts) and compared hysteroscopic cold scissors with electrosurgery for the treatment of intrauterine adhesion were included. Mean differences, odds ratios, and 95% confidence intervals (CIs) were reported. Bias was evaluated using the Cochrane Risk of Bias assessment tool for randomized controlled trials and the Newcastle-Ottawa Scale for observational studies. Data were analyzed using RevMan software (Review Manager version 5.3, The Cochrane Collaboration, 2014). Two researchers independently extracted data and assessed the quality of the included studies. If a consensus was not reached, a third researcher was consulted.

Results: Nine studies (n = 761; 6 randomized controlled trials and 3 retrospective studies) were included. The intrauterine adhesion recurrence rate with second look hysteroscopy was significantly lower (odds ratio = 0.30, 95% CI = 0.16–0.56, $P = .0003$) with hysteroscopic cold scissors than with electrosurgery. The total operation time was significantly shorter (mean difference = −7.75, 95% confidence interval = −8.50 to −7.07; $P < .00001$), intraoperative blood loss was significantly lower (mean difference = −9.88, 95% CI = −11.25 to −8.51; $P < .00001$), and the menstrual flow rate was significantly higher (odds ratio = 4.36, 95% confidence interval = 2.56–7.43, $P < .00001$) with hysteroscopic cold scissors than with electrosurgery. There were no significant differences in the pregnancy rate. One complication (1 perforation case, hysteroscopic cold scissors group) was reported.

Conclusions: Hysteroscopic cold scissors is more efficient in preventing intrauterine adhesion recurrence, increasing the menstrual flow, reducing intraoperative blood loss, and shortening the operation time.

Abbreviations: CI = confidence interval, CS = cold scissors, ES = electrosurgery, HA = hysteroscopic adhesiolysis, IUA = intrauterine adhesions, MD = mean difference, NOS = Newcastle-Ottawa Scale, OR = odds ratio, RCTs = randomized controlled trials.

Keywords: Asherman syndrome, electrosurgery, gynatresia, hysteroscopy, recurrence

Adhesiolysis with Fluid Pressure

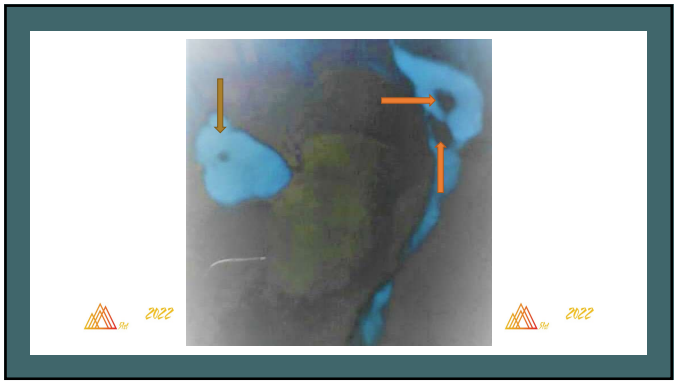
Central before Lateral Adhesions [1,2]

Exploring the Cavity

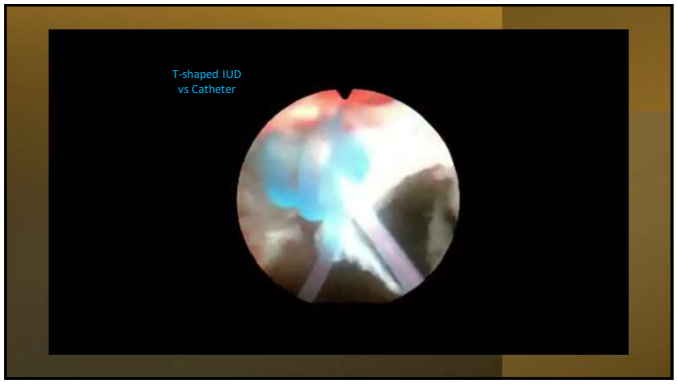
Exploring Dark Areas[3]

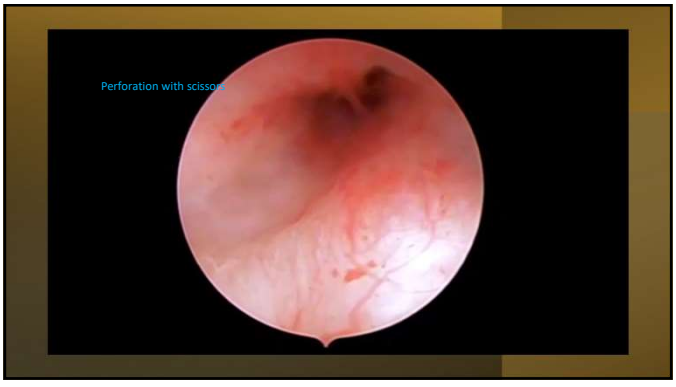
Exploring The Hole and Columnar Epithelium

Two Holes: Determining which to Explore


2022
2022


SECOND-LOOK
GYNESCOPE


T-shaped IUD
vs Catheter


Perforation with scissors

CONCLUSION

- Hysteroscopic adhesiolysis remains the treatment of choice in the management of AS
- Careful exploration and understanding the uterine anatomy is key
- Scissors is associated with fewer complications

References

- [1]Okohue JE. Role of Assisted operative hysteroscopy in Asherman's management. In: Manchanda R (ed). Intra uterine adhesions. Springer, Singapore. 2021; 123-35.
- [2]Deans A, Abbott . Review of intrauterine adhesions. J Minim Invasive Gynecol. 2010; 17: 555-69.
- [3]Emanuel HH, Hanstede M. Hysteroscopic treatment of Asherman syndrome. In: Hysteroscopy. Tinelli A, Alonso LP, Haimovich S (eds). Springer, Switzerland. 2018; 709-18.

THANK YOU

CULTURAL AND LINGUISTIC COMPETENCY & IMPLICIT BIAS

The California Medical Association (CMA) announced new standards for Cultural Linguistic Competency and Implicit Bias in CME. The goal of the standards is to support the role of accredited CME in advancing diversity, health equity, and inclusion in healthcare. These standards are relevant to ACCME-accredited, CMA-accredited, and jointly accredited providers located in California. AAGL is ACCME-accredited and headquartered in California.

CMA developed the standards in response to California legislation (Business and Professions (B&P) Code Section 2190.1), which directs CMA to draft a set of standards for the inclusion of cultural and linguistic competency (CLC) and implicit bias (IB) in accredited CME.

The standards are intended to support CME providers in meeting the expectations of the legislation. CME provider organizations physically located in California and accredited by CMA CME or ACCME, as well as jointly accredited providers whose target audience includes physicians, are expected to meet these expectations beginning January 1, 2022. AAGL has been proactively adopting processes that meet and often exceed the required expectations of the legislation.

CMA CME offers a variety of resources and tools to help providers meet the standards and successfully incorporate CLC & IB into their CME activities, including FAQ, definitions, a planning worksheet, and best practices. These resources are available on the CLC and IB standards page on the CMA website.

Important Definitions:

Cultural and Linguistic Competency (CLC) – The ability and readiness of health care providers and organizations to humbly and respectfully demonstrate, effectively communicate, and tailor delivery of care to patients with diverse values, beliefs, identities and behaviors, in order to meet social, cultural and linguistic needs as they relate to patient health.

Implicit Bias (IB) – The attitudes, stereotypes and feelings, either positive or negative, that affect our understanding, actions and decisions without conscious knowledge or control. Implicit bias is a universal phenomenon. When negative, implicit bias often contributes to unequal treatment and disparities in diagnosis, treatment decisions, levels of care and health care outcomes of people based on race, ethnicity, gender identity, sexual orientation, age, disability and other characteristics.

Diversity – Having many different forms, types or ideas; showing variety. Demographic diversity can mean a group composed of people of different genders, races/ethnicities, cultures, religions, physical abilities, sexual orientations or preferences, ages, etc.

Direct links to AB1195 (CLC), AB241 (IB), and the B&P Code 2190.1:

Bill Text – AB-1195 Continuing education: cultural and linguistic competency.
Bill Text – AB-241 Implicit bias: continuing education: requirements.
Business and Professions (B&P) Code Section 2190.1

CLC & IB Online Resources:

Diversity-Wheel-as-used-at-Johns-Hopkins-University-12.png (850×839) (researchgate.net)
Cultural Competence In Health and Human Services | NPIN (cdc.gov)
Cultural Competency – The Office of Minority Health (hhs.gov)
Implicit Bias, Microaggressions, and Stereotypes Resources | NEA
Unconscious Bias Resources | diversity.ucsf.edu
Act, Communicating, Implicit Bias (racialequitytools.org)
https://kirwaninstitute.osu.edu/implicit-bias-training
https://www.uptodate.com/contents/racial-and-ethnic-disparities-in-obstetric-and-gynecologic-care-and-role-of-implicitbiases
https://www.contemporaryobgyn.net/view/overcoming-racism-and-unconscious-bias-in-ob-gyn
https://pubmed.ncbi.nlm.nih.gov/34016820/