Surgical Tutorial 5: Isthmocele

PROGRAM CHAIR
Charles E. Miller, MD

Jaime A. Albornoz, MD Kirsten J. Sasaki, MD
Target Audience
This educational activity is developed to meet the needs of surgical gynecologists in practice and in training, as well as other healthcare professionals in the field of gynecology.

Accreditation
AAGL is accredited by the Accreditation Council for Continuing Medical Education (ACCME) to provide continuing medical education for physicians.

The AAGL designates this live activity for a maximum of 1.0 AMA PRA Category 1 Credit(s)™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

DISCLOSURE OF RELEVANT FINANCIAL RELATIONSHIPS
As a provider accredited by the Accreditation Council for Continuing Medical Education, AAGL must ensure balance, independence, and objectivity in all CME activities to promote improvements in health care and not proprietary interests of a commercial interest. The provider controls all decisions related to identification of CME needs, determination of educational objectives, selection and presentation of content, selection of all persons and organizations that will be in a position to control the content, selection of educational methods, and evaluation of the activity. Course chairs, planning committee members, presenters, authors, moderators, panel members, and others in a position to control the content of this activity are required to disclose relevant financial relationships with commercial interests related to the subject matter of this educational activity. Learners are able to assess the potential for commercial bias in information when complete disclosure, resolution 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 support. We believe this mechanism contributes to the transparency and accountability of CME.
Table of Contents

Course Description ........................................................................................................................................... 1

Disclosure .......................................................................................................................................................... 2

Isthmocele – Definition, Signs, Symptoms, Risk Factors, Diagnostic Options, Medical Treatment 
K.J. Sasaki .......................................................................................................................................................... 4

Hysteroscopic Management of Isthmocele – Techniques and Outcomes 
J.A. Albornoz ...................................................................................................................................................... 14

Laparoscopic Management Techniques and Outcomes 
C.E. Miller .......................................................................................................................................................... 19

Cultural and Linguistics Competency .................................................................................................................. 24
Surgical Tutorial 5: Isthmocele

Charles E. Miller, Chair

Faculty: Jaime A. Albornoz, Kirsten J. Sasaki

An isthmocele, or cesarean section niche, is an anechoic area at the site of a previous caesarean section(s) uterine scar. It has been noted to occur in 24-69% of women undergoing transvaginal sonography, and 56-78% of women evaluated with transvaginal saline infused sonogram. While most cesarean section defects are asymptomatic, approximately 5% of isthmoceles present with various gynecologic indications including abnormal uterine bleeding, dysmenorrhea, dyspareunia, pelvic pain, secondary infertility and less frequently, ectopic pregnancy. Given that nearly one in three successful pregnancies in the United States is delivered via cesarean section, the diagnosis and treatment of this entity is gaining greater significance.

This session devoted to isthmocele, will define the concern, describe the pathologic findings, risk factors, signs, symptoms, as well as various methods to enable proper diagnosis. While medical treatment will be presented, greater attention will be devoted to the surgical treatment of isthmocele, both hysteroscopic and laparoscopic. Not only will techniques be described, but outcomes data will be discussed as well.

Learning Objectives: At the conclusion of this course, the participant will be able to: 1) List two factors that increase the risk of isthmocele, post-cesarean section; and 2) list two procedures to diagnose an isthmocele.

Course Outline

11:00 Welcome, Introductions and Course Overview

11:05 Isthmocele – Definition, Signs, Symptoms, Risk Factors, Diagnostic Options, Medical Treatment

11:20 Hysteroscopic Management of Isthmocele – Techniques and Outcomes

11:35 Laparoscopic Management Techniques and Outcomes

11:50 Questions & Answers

12:00 Adjourn
PLANNER DISCLOSURE
The following members of AAGL have been involved in the educational planning of this workshop (listed in alphabetical order by last name).
Art Arellano, Professional Education Manager, AAGL*
R. Edward Betcher*
Amber Bradshaw
Speakers Bureau: Myriad Genetics Lab
Other: Proctor: Intuitive Surgical
Sarah L. Cohen
Consultant: Olympus
Erica Dun*
Joseph (Jay) L. Hudgens
Contracted Research: Gynesonics
Frank D. Loffer, Medical Director, AAGL*
Suketu Mansuria
Speakers Bureau: Covidien
Linda Michels, Executive Director, AAGL*
Charles E. Miller
Contracted Research: AbbVie, Actavis, Aegea Medical, Bayer Healthcare Corp., Covidien, Ferring Pharmaceuticals, Gynesonics, Intuitive Surgical, Merck Serono, Watson Pharmaceuticals
Consultant: AbbVie, Covidien, Ethicon Endo-Surgery, Gynesonics, Halt Medical, Hologic, Intuitive Surgical, Metalmark Capital, Pacira Pharmaceuticals, Smith & Nephew Endoscopy, Stryker Endoscopy
Speakers Bureau: Ethicon Endo-Surgery, Intuitive Surgical, Smith & Nephew Endoscopy, Smith & Nephew Endoscopy, Royalty: Thomas Medical
Other: Study (in-bag morcellation): Espiner Medical
Other: Study: Genesis Genetics
Karen C. Wang*
Johnny Yi*

SCIENTIFIC PROGRAM COMMITTEE
Sawsan As-Sanie
Consultant: Myriad Genetics Lab
Jubilee Brown*
Aarathi Cholkeri-Singh
Consultant: Smith & Nephew Endoscopy
Speakers Bureau: Bayer Healthcare Corp., DySIS Medical, Hologic
Other: Advisory Board: Bayer Healthcare Corp., Hologic
Jon I. Einarsson*
Suketu Mansuria
Speakers Bureau: Covidien
Andrew I. Sokol*
Kevin J.E. Stepp
Consultant: CONMED Corporation, Teleflex
Stock Ownership: Titan Medical
Karen C. Wang*

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).
Jaime A. Albornoz*
Charles E. Miller  
Contracted Research: AbbVie, Actavis, Aegea Medical, Bayer Healthcare Corp., Covidien, Ferring Pharmaceuticals, Gynecare, Intuitive Surgical, Merck Serono, Watson Pharmaceuticals  
Consultant: AbbVie, Covidien, Ethicon Endo-Surgery, Gynecare, Halt Medical, Hologic, Intuitive Surgical, Metalmark Capital, Pacira Pharmaceuticals, Smith & Nephew Endoscopy, Stryker Endoscopy  
Speakers Bureau: Ethicon Endo-Surgery, Intuitive Surgical, Smith & Nephew Endoscopy, Royalty: Thomas Medical  
Other: Study (in-bag morcellation): Espiner Medical  
Other: Study: Genesis Genetics  
Kirsten J. Sasaki*  
Content Reviewer has no relationships.

Asterisk (*) denotes no financial relationships to disclose.
SURGICAL TUTORIAL 5: ISTHMOCELE

Kirsten J. Sasaki, MD FACOG
Advanced Gynecologic Surgery Institute

Disclosure Slide
• I have no financial relationships to disclose.

Objective
• The attendee will be able to define a uterine isthmocele as well as list the clinical symptoms, risk factors, tools for diagnosis, and medical treatment options.

Definition
• Isthmocele/P Cesarean Scar
  - No universal definition used in literature
  - Diverticulum at the uterine isthmus or endocervical canal at the site of a previous cesarean section (CS) scar
  - Sonographic finding of a triangular anechoic area at the presumed site of incision (no size defined)
  - Myometrial thinning at site of CS scar

Epidemiology
• Incidence after CS is unknown: 24-88%
  - Depends upon the definition used for diagnosis
• First described by Morris in 1995
  - Reviewed 50 hysterectomy specimens with a history CS
  - Hysterectomy performed for menorrhagia (72%), dyspareunia, dysmenorrhea, lower abdominal pain refractory to medical management
  - Distortion and widening of LUS (75%)
  - “Free” red blood cells in endometrial stroma of scar (59%)
  - Fragmentation and breakdown of endometrium of scar (37%)
  - Iatrogenic adenomyosis (18%)

2012: CS rate 32.8%
Possible Risk Factors

- "Non-modifiable" risk factors
  - Multiple CS
  - Retroflexed Uterus
- Labor-related risk factors
  - Duration of labor >5 hours
  - Cervical dilation >5cm
  - Lower station
- Surgical Technique
  - Incision closer to internal cervical os
  - Suturing Technique

Number of Cesarean Sections

- Wang et al 2009
  - Cross-sectional study of 207 women with history of CS
  - Measured width and depth of gap, thickness of residual myometrium

<table>
<thead>
<tr>
<th>Number of CS</th>
<th>Mean defect width</th>
<th>Mean depth</th>
<th>Mean residual thickness</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>4.30</td>
<td>3.00</td>
<td>2.20</td>
</tr>
<tr>
<td>1</td>
<td>5.30</td>
<td>3.10</td>
<td>2.30</td>
</tr>
<tr>
<td>&gt;1</td>
<td>5.50</td>
<td>3.20</td>
<td>2.40</td>
</tr>
</tbody>
</table>

Retroflexed uteri

- Wang et al (2009)
  - Mean defect width: retroflexed > anteflexed uteri (p<0.001)
  - No difference depth or residual thickness (p=0.535, 0.067, respectively)

Labor related risk factors

- Osser et al (2010)
  - Observational cross-sectional study
  - Ultrasounds and sono-hysterograms on 108 women 6-9 months after CS
  - Large Defect: Thickness of remaining myometrium ≤ 2.2mm
  - Measured distance between scar and internal cervical os
  - Results:
    - 30 (27.75%) Intact Scars
    - 56 (52%) Small Defects
    - 22 (20%) Large Defects

Uterine Closure Technique

  - Prospective, randomized study on 78 term CS
  - Ultrasound measure healing defect:
    - Ant. wall thickness + height of wedge shaped defect
  - Results:
    - 68% defect
    - P=0.04, OR 2.118
    - 45% defect
Uterine Closure Technique
• Ceci et al. (2012)
  • Prospective, longitudinal cohort study, primary elective cesarean section
  
<table>
<thead>
<tr>
<th>One layer closure</th>
<th>Group I: Locked continuous suture</th>
<th>Group II: Interrupted suture</th>
</tr>
</thead>
<tbody>
<tr>
<td>N=30</td>
<td>25/26 (96.15%) pouch</td>
<td>24/29 (82.76%) pouch</td>
</tr>
<tr>
<td>Size of pouch (mm²)</td>
<td>6.3 (2.1-14.6)</td>
<td>5.8 (1.9-7.9)</td>
</tr>
</tbody>
</table>

TVUS/HSC >24 months
- Size of pouch (mm²)
  - 19/20 (95%) pouch
  - 6.2 (2.1-14.7)
  - 17/22 (77.27%) pouch
  - 3.8 (1.9-7.9)
  - p=.001

Uterine Closure Technique
• Hayakawa et al. prospective study comparing suture technique
  • Primary CS
  • US 30-38 days post-operatively for defect >5mm depth

Signs and Symptoms
• Abnormal uterine bleeding
  • Post-menstrual bleeding
  • Blood flow that persists for several days to weeks after menstrual flow has ended
  • Blood accumulates in outpouching and lack of coordinated muscle contractions lead to continued accumulation of blood and menstrual debris
  • Blood produced in situ in the outpouching
  • Degree of symptoms may be related to size of defect

Abnormal Uterine Bleeding
• Uppal et al. (2011)
  • Pelvic Ultrasound of 318 women
  • 29/71 (40%) visible defect on US
Abnormal Uterine Bleeding

  - Retrospective cohort study of 92 patients with history of CS with evidence of a pouch
  - Compared area of pouch to presence of symptoms

<table>
<thead>
<tr>
<th>Group I – AUB</th>
<th>Group II - Asymptomatic</th>
</tr>
</thead>
<tbody>
<tr>
<td>N=73 (3 failed to follow-up)</td>
<td>N=14 (2 failed follow-up)</td>
</tr>
<tr>
<td>Age (years)</td>
<td>39 ± 5.8</td>
</tr>
<tr>
<td>Cesarean deliveries (n)</td>
<td>3 ± 1.2</td>
</tr>
<tr>
<td>Area of pouch (mm²)</td>
<td>42 ±40.4</td>
</tr>
</tbody>
</table>

p=.15

De Vaate et al (2011)
- Prospective Observational Cohort study with history of CS

Pelvic Pain

- Dysmenorrhea
- Chronic Pelvic Pain
- May be associated with iatrogenic adenomyosis

Abnormal Uterine Bleeding/Pelvic Pain

- Wang et al (2009): Cross-sectional study of 207 patients, compared symptoms to width, depth and residual thickness of defect

Secondary Infertility

- Accumulation of blood and mucus
  - Negatively impact cervical mucus quality
  - Affect sperm quality
  - Obstruct sperm transport
  - Interfere with embryo implantation
- Chronic Inflammatory state
- Evidence associated with improvement in fertility after treatment of isthmocele

Gubbini et al (2011)
- Prospective study of 41 women with cesarean-induced isthmocele and secondary infertility
- Other causes of female and male fertility excluded
- All patients underwent hysteroscopic isthmoplasty
- All patients (41/41) spontaneously conceived between 12-24 months post-operatively
  - 37/41 (90.2%) Cesarean Section
  - 4/41 (9.8%) Spontaneous abortion
Secondary Infertility

Table 1: Clinical characteristics of study population

<table>
<thead>
<tr>
<th>Variable</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age, yr</td>
<td>25 (1.1, 36.4)</td>
</tr>
<tr>
<td>Duration of infertility, yr</td>
<td>42.3 (28.0, 58.1)</td>
</tr>
<tr>
<td>Previous cesarean section</td>
<td>14 (26)</td>
</tr>
<tr>
<td>Prenatal blood loss</td>
<td>37 (88)</td>
</tr>
<tr>
<td>Number of previous cesareans</td>
<td>1-3</td>
</tr>
<tr>
<td>Site of infection</td>
<td>Superior third of cervical canal: 20 (48.8), Middle third of cervical canal: 17 (30.3), Inferior third of cervical canal: 9 (25.8)</td>
</tr>
</tbody>
</table>

Cesarean Scar Pregnancy

- First proposed in 1978
- Gestational sac implanted in site of previous cesarean incision
- Incidence 1/1226 pregnancies
  - Rate: 0.45% in pregnancy after cesarean section
  - 6.6% ectopic after cesarean section
  - Difficult to diagnose: 107/751 (13.6%) cases missed

Diagnosis

- Imaging
  - Transvaginal Ultrasound (TVUS)
  - Saline Infused Sonohysterogram (SIS)
  - Hysterosalpingogram (HSG)
  - Hysteroscopy
  - MRI
- Timing
  - Proliferative phase, right after menstrual cycle has ended
Transvaginal Ultrasound (TVUS)

- Key findings
  - Wedge defect
  - Triangular anechoic area with apex pointing anteriorly

Transvaginal Ultrasound (TVUS)

Saline Infused Sonohysterogram (SIS)

- Enhances the ability to delineate the defect
- Defects may appear 1-2mm larger given pressure of the saline on the scar
- Criticism - hyper-pressure distorts real measurements and make defects appear larger than they actually are

TVUS

- Naji et al proposed a standardized way to measure the CS scars with TVUS
Saline Infused Sonohysterogram (SIS)

Hysterosalpingogram (HSG)
- Extension of contrast into defect in myometrium at location of prior hysterotomy
- Limitations: cannot measure myometrial thickness
  - HSG on 148 women with history of cesarean section and infertility
    - 89 (60%) defects at location of scar
    - 31 (33%) linear
    - 58 (95%) bulbous

Hysteroscopy
- Dome, bulging pouch or wedge on anterior aspect of lower uterine wall or cervical canal
  - Talamonte et al (2012):
    - Descriptive study of 20 women
      - History of cesarean section, no history of other surgery and complained of prolonged genital bleeding after menses
      - 18 (90%) enlargement followed by retraction on anterior wall
Hysteroscopy

Magnetic Resonance Imaging (MRI)

- Able to delineate the borders and measure myometrial thickness without saline artificially increasing the size of defect

TVUS vs. SIS

- Osser et al (2010):
  - 108 women with history of one or more CS and no other uterine surgeries
  - TVUS Ultrasound → SIS
  - Scar defect = any indentation at the site of the scar

<table>
<thead>
<tr>
<th></th>
<th>TVUS</th>
<th>SIS</th>
</tr>
</thead>
<tbody>
<tr>
<td>One CS (n=68)</td>
<td>42 (62%)</td>
<td>53 (78%)</td>
</tr>
<tr>
<td>Two CS (n=32)</td>
<td>28 (88%)</td>
<td>31 (97%)</td>
</tr>
<tr>
<td>Three CS (n=8)</td>
<td>8 (100%)</td>
<td>8 (100%)</td>
</tr>
</tbody>
</table>

- More scar defects were identified on SIS vs. TVUS
TVUS vs. SIS

De Vaate (2011)
- Prospective, observational cohort study
- 225 women CS 6-12 months prior
- Niche: anechoic area at the site of the cesarean scar, depth ≥ 1 mm
- TVUS → GIS

<table>
<thead>
<tr>
<th></th>
<th>Niche</th>
</tr>
</thead>
<tbody>
<tr>
<td>TVUS, n=225</td>
<td>54/225 (24%)</td>
</tr>
<tr>
<td>GIS, n=209</td>
<td>117/209 (56%)</td>
</tr>
</tbody>
</table>

SIS vs. hysteroscopy

El-Mazny (2011):
- Comparative Observational Cross-sectional study
- 75 women with history of prior CS, complaining of menstrual disorders, infertility or recurrent pregnancy loss
- Compare SIS and hysteroscopy findings
- Subjects
  - Age: Mean 27.3 ± 2.8 years
  - Symptoms: Infertility (49.3%), Menstrual disorders (33.3%), Recurrent Pregnancy Loss (17.3%)
- SIS: Defect in 20 cases
- Hysteroscopy: Defect in 22 cases

Medical Treatment Options

- Bleeding
- Abscess
- Cesarean Scar Ectopic Pregnancy

SIS vs. hysteroscopy

El-Mazny (2011)
- 75 women with history of prior CS, complaining of menstrual disorders, infertility or recurrent pregnancy loss
- Compare SIS and hysteroscopy findings
- Subjects
  - Age: Mean 27.3 ± 2.8 years
  - Symptoms: Infertility (49.3%), Menstrual disorders (33.3%), Recurrent Pregnancy Loss (17.3%)
- SIS: Defect in 20 cases
- Hysteroscopy: Defect in 22 cases

Oral Contraceptive Pills

- Observational study of 11 women with isthmocoele and AUB
- Pre-treatment and post-treatment US
- Treated for three cycles with 50mcg ethinyl estradiol/0.5mg norgestrel
- Stopped for 3-6 months and, AUB stopped
- Ultrasound post-treatment: dehiscences <3mm disappeared (7 cases)
- Reduced doppler flow pattern
### Abscess
- Boukrid et al. case report CS scar abscess 10 years later

### Sources

### Treatment of CS Ectopic Pregnancies
- **Medications**
  - Methotrexate
  - Additional treatment required 25%, Complications 13%
- **Surgical**
  - Dilation and Curettage
  - Additional treatment 52%, Complications 21%
  - Transvaginal approach
  - Additional treatment 0%, Complication <1%
  - Laparoscopy
  - Additional treatment 3%, Severe Complications 0

### Sources

### Thank you for your time
- **Questions?**
Hysteroscopic Management of Isthmocele Techniques and Outcomes

Jaime Albornoz MD.
Unit for Reproductive Medicine
Clinica Las Condes - Chile

Disclosure

I have no financial relationships to disclose

Objective

Discuss surgical treatment of symptomatic isthmocele, effectiveness and patient outcomes.

Isthmocele: Definition

Ultrasound
- Triangular shaped area located at the level of the previous c-section scar in the anterior uterine wall.

Hysteroscopy
- Reservoir-like pouch defect on the anterior wall of the uterine isthmus located at the level of a previous c-section scar.

Clinical Manifestations

- Prevalence of symptomatic Isthmocele: 19.4-84%.
- Postmenstrual abnormal uterine bleeding or spotting.
- Dark red or brown discharge (menstrual blood mixed with cervical mucus)
- Best visible at transvaginal ultrasound between day 7 and 12 of menstrual cycle.

Risk Factors

- Number of c-sections
- Uterine position (Retroversion)
- Surgical technique of closure (Monolayer -continuous running lock)
- Labor before c-section
Why to treat Isthmocele?

- Cause of postmenstrual abnormal uterine spotting, either spontaneously or after coitus.
- Disrupts quality of cervical mucus
- Harmful for sperm survival and motility
- Reflux to the endometrial cavity might be a cause of chronic endometritis
- Possible cause of implantation failure
- Cause of pelvic pain

Hysteroscopic approach

Aim

“To facilitate the drainage of menstrual blood through the cervix, rather than anatomical correction”

Hysteroscopic approach

Overlying myometrial thickness ≥ 2 mm

Basic Steps

- Diagnostic hysteroscopy
- Cervical canal dilatation.
- Resectoscope excision of the caudal (proximal) border of the C-section scar defect.
- Cauterization of the superficial dilated vessels inside the pouch.

Anteverted Uterus

Retroverted Uterus
- Complete relief of symptoms (80%)
- Improvement (7%)
- No change (13%)

Raimondo et al., JMIG 2015

Conclusion

- Surgical treatment of symptomatic isthmus with hysteroscopic resectoscope is a safe, effective and reproducible procedure.
References


Objective

- The attendee will be able to explain how to excise and repair an isthmocele via a laparoscopic approach.

Percentage of Cesarean Section Deliveries

<table>
<thead>
<tr>
<th>Country</th>
<th>Year</th>
<th>Percentage</th>
<th>Increase</th>
</tr>
</thead>
<tbody>
<tr>
<td>United States</td>
<td>1996</td>
<td>20.7%</td>
<td></td>
</tr>
<tr>
<td>United States</td>
<td>2009</td>
<td>32.3%</td>
<td>50% increase</td>
</tr>
<tr>
<td>China</td>
<td>2010</td>
<td>50%</td>
<td></td>
</tr>
<tr>
<td>Brazil</td>
<td>2008</td>
<td>48%</td>
<td></td>
</tr>
</tbody>
</table>


Laparoscopic Isthmoplasty

Case of a Hysteroscopy, Laparoscopic Isthmoplasty

Kirsten J. Sasaki, M.D.
Charles E. Miller, M.D.
Lutheran General Hospital
Park Ridge, Illinois

Robotic Isthmocele
Robotic-Assisted Isthmoplasty

Uterine Uplift

Uterine Uplift

Cesarean Scar Defect Repair Via the Laparoscope

Cesarean Scar Defect Repair Via the Laparoscope (cont'd)

Cesarean Scar Defect Repair Via the Laparoscope (cont'd)
Laparoscopic Repair of Isthmocele for Secondary Infertility

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Pregnancies</th>
<th>Menses</th>
<th>fistula</th>
<th>Intra</th>
<th>Ultrasound</th>
<th>Migration</th>
</tr>
</thead>
<tbody>
<tr>
<td>TV</td>
<td>10/18</td>
<td>55.6%</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>LSC</td>
<td>22/29</td>
<td>75.9%</td>
<td>4</td>
<td>3</td>
<td>5</td>
<td>8</td>
</tr>
</tbody>
</table>

Robotic-Assisted Repair of Isthmocele

- La Rosa et al (2013)
- Case of 39 yo G4P2022 with persistent vaginal spotting for 5 months, history of cesarean section 3 months prior to onset
- Bladder flap created, hysteroscopy performed, incision made and defect removed. Area closed with 0-Vicryl sutures in 2 layers
- EBL 50cc
- 3 months post-operatively - asymptomatic

Endoscopic Repair of Isthmocele for Secondary Infertility

- 22 woman
- 16 women with LSC secondary to myometrial thickness ≤ 2.5mm
- 4 women with HSC secondary to myometrial thickness ≥ 2.5mm

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Fistula</th>
<th>Migration</th>
</tr>
</thead>
<tbody>
<tr>
<td>HSC</td>
<td>4/4</td>
<td>100%</td>
</tr>
<tr>
<td>LSC</td>
<td>10/18</td>
<td>55.6%</td>
</tr>
</tbody>
</table>

Isthmocele Repair
Transvaginal (TV) vs. Laparoscopic (LSC)

- Retrospective study
- 124 patients underwent isthmocele repair due to prolonged menstruation (13 – 20 days)
- Repair decided by surgeon

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Defect Length</th>
<th>Menses</th>
<th>Operative</th>
</tr>
</thead>
<tbody>
<tr>
<td>TV</td>
<td>27</td>
<td>Yes</td>
<td>12</td>
</tr>
<tr>
<td>LSC</td>
<td>59</td>
<td>No</td>
<td>20 ± 40</td>
</tr>
</tbody>
</table>

Ectopic Pregnancy at Isthmocele
Robotic-Assisted Treatment of Residual Ectopic Pregnancy in an Isthmocele
- Rx initially with multiple IV methotrexate courses
- Dilute vasopressin - used to minimize energy and blood loss
- Balloon uterine manipulator used to delineate hysterotomy incision
- 2 layer barbed suture hysterotomy closure
- Baseball style closure of vesicouterine peritoneum
- Successfully pregnancy – 18 months post surgery


Robotic-Assisted Treatment of Residual Ectopic Pregnancy in an Isthmocele
- Rx initially with two in situ injections of methotrexate
- Preoperative uterine artery embolization
- Temporary left uterine artery occlusion performed
- Closure – delayed absorbable sutures


Cesarean Scar Ectopic

Uterine Isthmocele – What do we know and what can we do?

Hysteroscopic Versus Laparoscopic Resection of Cesarean Scar Pregnancy
- Wang et al (2014)
- Compared 39 Hysteroscopic resections with 32 Laparoscopic resections
- Drain left in for 48 hours then removed
- Followed B-HCG and if did not decline and mass still identified retreated
- Results:
  - Hysteroscopic Group:
    - 2 patients in hysteroscopic group converted
    - 8 patients: B-HCG failed to decline and persistent mass
    - 2: UAE and MTX
    - 3: hysteroscopic resection
  - Laparoscopic Group – no treatment necessary

Laparoscopic Isthmocele Repair
“Chicago Style”
Evaluation Question

Which of the follow are correct statements regarding a laparoscopic approach to the symptomatic isthmocele?

a) Excision and repair of the isthmocele is contraindicated at time of laparoscopic treatment of an ectopic pregnancy in the C-section defect.

b) Multi layer closure of the isthmocele defect post resection is recommended.

c) Literature supports a clear advantage of a robotic approach over conventional surgery.

d) Hysteroscopy is contraindicated at time of laparoscopic isthmocele excision and repair.

e) An advantage of a laparoscopic approach to isthmocele excision and repair is the minimal need to mobilize the bladder.

Answer = b

References

• Hellerstein S, et al., BJOG. 2015 Jan;122(2):160-4

Thank you!
CULTURAL AND LINGUISTIC COMPETENCY

Governor Arnold Schwarzenegger signed into law **AB 1195** (eff. 7/1/06) requiring local CME providers, such as the AAGL, to assist in enhancing the cultural and linguistic competency of California's physicians (researchers and doctors without patient contact are exempt). This mandate follows the federal Civil Rights Act of 1964, Executive Order 13166 (2000) and the Dymally-Alatorre Bilingual Services Act (1973), all of which recognize, as confirmed by the US Census Bureau, that substantial numbers of patients possess limited English proficiency (LEP).

**California Business & Professions Code §2190.1(c)(3)** requires a review and explanation of the laws identified above so as to fulfill AAGL's obligations pursuant to California law. Additional guidance is provided by the Institute for Medical Quality at [http://www.imq.org](http://www.imq.org).

**Title VI of the Civil Rights Act of 1964** prohibits recipients of federal financial assistance from discriminating against or otherwise excluding individuals on the basis of race, color, or national origin in any of their activities. In 1974, the US Supreme Court recognized LEP individuals as potential victims of national origin discrimination. In all situations, federal agencies are required to assess the number or proportion of LEP individuals in the eligible service population, the frequency with which they come into contact with the program, the importance of the services, and the resources available to the recipient, including the mix of oral and written language services. Additional details may be found in the Department of Justice Policy Guidance Document: Enforcement of Title VI of the Civil Rights Act of 1964 [http://www.usdoj.gov/crt/cor/pubs.htm](http://www.usdoj.gov/crt/cor/pubs.htm).

**Executive Order 13166,”Improving Access to Services for Persons with Limited English Proficiency”**, signed by the President on August 11, 2000 [http://www.usdoj.gov/crt/cor/13166.htm](http://www.usdoj.gov/crt/cor/13166.htm) was the genesis of the Guidance Document mentioned above. The Executive Order requires all federal agencies, including those which provide federal financial assistance, to examine the services they provide, identify any need for services to LEP individuals, and develop and implement a system to provide those services so LEP persons can have meaningful access.

**Dymally-Alatorre Bilingual Services Act** (California Government Code §7290 et seq.) requires every California state agency which either provides information to, or has contact with, the public to provide bilingual interpreters as well as translated materials explaining those services whenever the local agency serves LEP members of a group whose numbers exceed 5% of the general population.

~