Plenary 6: Reproductive Issues

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Professional Education Information

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
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Cultural and Linguistics Competency .................................................................................................................. 19
This session presents several high-quality studies concerning reproductive issues and techniques used to treat patients.

Learning Objective: *At the conclusion of this course, the participant will be able to:* 1) Discuss current data concerning a variety of reproductive issues encountered in daily practice.

**Course Outline**

12:10 Factors Affecting Recurrence of Leiomyomas in Older Women (above age 40) M. Hijaz
12:16 Discussant S. Becker
12:20 Which Should Be the Preferred Technique during Laparoscopic Ovarian Cystectomy, Hemostatic Sutures or Bipolar Electrocoagulation? A Randomized Controlled Prospective Study of Long-Term Ovarian Reserve B. Zeybek
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12:40 Role of Laparoscopy and Hysteroscopy in the Evaluation of Uterine Scar after Cesarean Section and Its Surgical Correction A. Arakelyan
12:46 Discussant J.E. Dotto
12:56 Discussant N. Mahnert
1:00 Video: Laparoscopic Hysterotomy and Evacuation of a Second Trimester Fetal Demise A. Lavelanet
1:06 Discussant R. Sangha
1:10 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).
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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).
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Content Reviewer has no relationships.

Asterisk (*) denotes no financial relationships to disclose.
Factors Affecting Recurrence of Leiomyomas in Older Women (above age 40)

Miriana Hijaz, MD. PGY4
Henry Ford Health System
Detroit, MI

Disclosure

- I have no financial relationships to disclose.

Objectives

- To evaluate the association between factors such as route of surgery and myoma weight on fibroid recurrence in women above 40
- To evaluate the effectiveness of myomectomy in women desiring fertility above age 40

Background

- More women in the recent years desire to preserve their uterus in the presence of symptomatic uterine fibroids
- Myomectomy has become an increasingly common gynecological procedure
- Age of childbearing has increased the demand for less aggressive management of uterine fibroids
- Scarce data on the surgical management of fibroids in women above age 40

Methods

- Retrospective chart review of 139 women above the age 40 who underwent myomectomy, regardless of route, between 2005-2016 at our institution
- To ensure no loss of follow up, we contacted all patients by phone with a questionnaire about their symptoms, recurrence if any, and pregnancy outcomes (including miscarriages, abortions, fetal losses etc)
- Statistical analysis was done using linear regression models, binary regression models, ANOVA

Results: Recurrence

- Recurrence rate 58% (79/139)
- 45 out of 139 elected not to re-operate (57%)

<table>
<thead>
<tr>
<th>Re-operation</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hysterectomy</td>
<td>15 (19%)</td>
</tr>
<tr>
<td>Myomectomy</td>
<td>10 (13%)</td>
</tr>
<tr>
<td>Hysteroscopic D&amp;C</td>
<td>8 (10%)</td>
</tr>
<tr>
<td>Uterine Artery Embolization</td>
<td>1% (1%)</td>
</tr>
</tbody>
</table>
Acknowledgments

- Roopina Sangha, MD, MPH, FACOG
- Sarah Zaza, MSII
- Jeffrey Jankowski, MD
- Andrew Taylor, MA

References

Which technique should be preferred to reduce ovarian damage during laparoscopic ovarian cystectomy according to long term ovarian reserve results, hemostatic sutures versus bipolar electrocoagulation?

Burak Zeybek
University of Texas Medical Branch
Department of Obstetrics and Gynecology
Galveston, TX

DISCLOSURES

• I have no financial relationships to disclose.

OBJECTIVES

– Explain which laparoscopic hemostatic techniques are more destructive on ovarian reserve
– Discuss effects of the techniques on pregnancy results

INTRODUCTION

• Ovarian cystectomy ↓ ovarian reserve
• Especially, after bilateral cystectomy, premature ovarian failure can be observed in some patients

METHODS

• Electrocautery group ➔ 30-40W bipolar current
• Only coagulated inside of the ovarian bed
• In suture groups ➔ One or two intraovarian knots (2-0 polydioxanone)

METHODS

• 18-40 years old reproductive 90 patients who have unilaterally cysts
• Cystectomy was only performed for cysts which are above 4 cm
• All participants have regular menstrual period
METHODS
• Preoperative and postoperative 1, 3, 12 month
  AMH, ovarian volume, AFC
• Blood plasma samples → -80 °C deep freeze
• Also two groups were evaluated in terms of pregnancy rates during follow up period.

RESULTS
AMH Levels
• In electrocautery group
  – preoperative AMH versus postoperative AMH (p=0.028)
• Difference between:
  Preoperative AMH versus postoperative 1 month (p=0.017)
    3 months (p=0.005) and 12 months (p=0.048)
• No significant difference between:
  Postoperative 1 month AMH versus
  3 months (p=0.784) and 12 months (p=0.936)
• Also no significant difference between:
  3 months AMH versus 12 months AMH (p=0.496).

<table>
<thead>
<tr>
<th>AMH Levels (ng/mL)</th>
<th>Hemostatic Suture Group (n=29)</th>
<th>Electrocautery Group (n=30)</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preoperative</td>
<td>6.02 ± 4.18</td>
<td>3.81 ± 3.05</td>
<td>0.574</td>
</tr>
<tr>
<td>Postoperative 1 Month</td>
<td>3.24 ± 3.01</td>
<td>2.32 ± 2.01</td>
<td>0.052</td>
</tr>
<tr>
<td>Postoperative 3 Months</td>
<td>3.17 ± 3.00</td>
<td>2.38 ± 2.07</td>
<td>0.006</td>
</tr>
<tr>
<td>Postoperative 12 Months</td>
<td>3.71 ± 3.09</td>
<td>2.79 ± 2.05</td>
<td>0.005</td>
</tr>
</tbody>
</table>

AMH Levels
• In hemostatic suture group,
  – statistical significant difference was not determined between pre and postoperative AMH levels (p=0.165)
• But postoperative AMH levels were more lower than preoperative levels

<table>
<thead>
<tr>
<th>AFC</th>
<th>Hemostatic Suture Group (n=29)</th>
<th>Electrocautery Group (n=30)</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Postoperative 1 Month</td>
<td>6.06 ± 3.66</td>
<td>4.26 ± 3.12</td>
<td>0.033</td>
</tr>
<tr>
<td>Postoperative 3 Months</td>
<td>7.91 ± 5.12</td>
<td>5.35 ± 4.59</td>
<td>0.001</td>
</tr>
<tr>
<td>Postoperative 12 Months</td>
<td>7.93 ± 5.23</td>
<td>5.86 ± 5.53</td>
<td>0.001</td>
</tr>
</tbody>
</table>

AFC Results
• In electrocautery (p=0.351) and also in hemostatic suture group (p=0.779)
  – No statistical significant difference in the way of AFC when:
    postoperative 1 month and 3 months and 12 months compared in the same group
RESULTS

Ovarian Volume Results

- in hemostatic suture group
  - No statistical difference postoperative 1, 3 and 12 months (p=0.248)
- In electrosurgery group
  - decreased ovarian volume
  - postoperative 3 months (p<0.01) and 12 (p<0.02) months according to postoperative 1 month
  - But no difference was diagnosed
    - between 3 months ovarian volume results and 12 months results (p=0.160)

<table>
<thead>
<tr>
<th>Ovarian Volume (mm³)</th>
<th>Hemostatic Suture Group (n=29)</th>
<th>Electrocautery Group (n=30)</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Postoperative 1 Month</td>
<td>13.63 ± 6.69</td>
<td>14.69 ± 6.89</td>
<td>0.001</td>
</tr>
<tr>
<td>Postoperative 3 Months</td>
<td>13.16 ± 7.72</td>
<td>11.81 ± 9.38</td>
<td>0.004</td>
</tr>
<tr>
<td>Postoperative 12 Months</td>
<td>10.67 ± 4.52</td>
<td>8.70 ± 5.05</td>
<td>0.012</td>
</tr>
</tbody>
</table>

DISCUSSION

According to AMH Levels

- Postoperation,
  - decreased AMH both groups at 1 month
  - but statistical significant was determined only in electrocautery group
- Cystectomy and both hemostatic procedures decrease ovarian reserve
  - because pre-operative AMH levels and cyst sizes of both groups were similar and also all operations were performed by the same surgeon
- But electrocautery is more destructive than suture,
  - because after operation decreased AMH levels in coutery group were lower than in suture group and it was statistically significant

According to AFC Levels

- AFC results stable in both groups
- In electrocautery group
  - AFC levels↓↓↓
    vs
  - Suture group during whole follow up period
- But we don’t know whether lower AFC levels in electrocautery group arised from hemostatic technique or cystectomy because we didn’t know AFC levels before surgery

According to Ovarian Volume Results

- In electrocautery group
  - ovarian volume measurements decreased during follow up period according to hemostatic suture group
- But this decrease did not progress after 3 months in electrocautery group
ACKNOWLEDGEMENTS


1 Ege University, Faculty of Medicine, Department of Obstetrics and Gynecology, Izmir, Turkey
2 Yasar University, Faculty of Science and Letters, Department of Actuarial, Izmir, Turkey
3 Ege University, Faculty of Medicine, Department of Physiology, Izmir, Turkey
4 Acibadem University, Faculty of Medicine, Department of Obstetrics and Gynecology, Istanbul, Turkey
Peri-procedural, pregnancy and peripartum complications in patients with laparoscopic or open myomectomy

Michal Mara, MD, PhD, Assoc. Prof.
Department of Ob & Gyn, General Faculty Hospital and the 1st Medical Faculty of the Charles University, Prague, Czech Republic

Disclosure
I have no financial relationships to disclose.

Learning Objectives
• To define technical challenges and peri-procedural threats and complications of laparoscopic (LM) and open myomectomy (OM)
• To demonstrate potential risks and complications of myomectomy during pregnancy and labor
• To apply the results of prospective clinical trial focused on surgical treatment of fibroids in pregnancy planning women

Fertility sparing treatment of uterine fibroids
• historical approach: conceive - hysterectomy (or OM)
  • „inoperable“ myoma (THREATS!)
• Today: more patients
  • age, diagnostics
• New methods
  • UAE, MRgFUS, SPRM
  • improved surgery (MIS)
  • few RCT

Reproductive Surgery

In patients desiring fertility myomectomy remains the standard of care.

Diagnosis & Pre-operative evaluation
• Uncomplicated (but!)
  • symptoms
  • US (MRI)
  • palpation
• Traps
  • multiplicity
  • pre-treatment (SPRM)
  • histology (STUMP)
  • who to treat?
Our clinical trial

- Prospective, non-randomized, one center
- University Ethical Board approval
- Premenopausal women with pregnancy plans included
- Treated with LM / OM
- Clinical & reproductive results

Challenging LM

Results

- Uterus saving surgery for adenomyosis can be feasible and effective
  - dysmenorrhea 81%
  - menorrhagia 50%
  - pregnancy rates > 46%

- Data supporting various types of treatment are lacking or suboptimal
  - urgent need of larger, well designed, comparative, clinical trials

Summary

References


Acknowledgements

Zdenka Lisá, MD
Kristýna Hlinecká, MD
David Kužel, MD, Prof., PhD

Department of Ob & Gyn
General Faculty Hospital and the
1st Medical Faculty of the Charles University
Prague, Czech Republic

Thank you 😊
The objective of this presentation is to describe terminology and clinical symptoms, and to discuss diagnostic methods and treatment options for uterine-scar incompetence in patient with previous cesarean sections.

Terminology

- Niche
- Isthmocele
- Uterine diverticulum
- Cesarean section scar defects
- Cesarean section scar dehiscence

Uterine dehiscence is of 2 types - complete and incomplete dehiscence. In incomplete uterine dehiscence, the serosa is intact. Full thickness tears of the uterine walls result in complete uterine ruptures. These ruptures mostly occur at the locations of previous cesarean section scars.

A defect of >50% of the uterine wall thickness has been used to define severe deficiency. In another study, defects that seemed subjectively large to sonographers, correlated with remaining myometrium thickness of 2.2 mm.2

Regnard et al defined dehiscence as at least 80% myometrial thinning on SIS.3

### Classification of Cesarean Scar Defects

<table>
<thead>
<tr>
<th>Scoring System</th>
<th>Stage I – mild (2-3)</th>
<th>Stage II – moderate (4-6)</th>
<th>Stage III – severe (7-9)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Measurements</td>
<td>Thickness of remaining myometrium (mm)</td>
<td>Myometrium remaining (%)</td>
<td>Number of distinct scans</td>
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</table>

The depth (height) of the isthmocele and its longitudinal dimension (base) were measured using the formula: Base x Height/2.

#### Risk Factors
- Number of cesarean section deliveries
- Uterine position
- Labor before cesarean delivery
- Duration of labor

#### Surgery-Related Factors
1. Low (cervical) location of the uterine incision during a CS
2. Incomplete closure of the uterine wall, due to single-layer, endometrial-saving closure technique or use of locking sutures
3. Surgical activities that may induce adhesion formation (i.e. non-closure of peritoneum, inadequate hemostasis, applied sutures)

#### No Definite Guideline for Treatment!

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### Symptoms
- Abnormal uterine bleeding
- Dysmenorrhea
- Pelvic pain
- Dyspareunia
- Infertility

### Complications:
- Adenomyosis
- Chronic endometriosis
- Synechiae
- Intraoperative complications
- Blood loss
- Uterine rupture
- Adhesions
- Incompetent cervix
- Abnormal location of the placenta
- Ectopic pregnancy in a uterine scar
- Abnormal location of a placenta
- Uterine rupture
- Postpartum hemorrhage
- Intraoperative complications
- Blood loss

### Diagnostic Methods
- HSG
- TVUS (transvaginal ultrasound) 2D/3D
- TVUS with contrast (saline infusion sonohysterography – SIS)
- TVUS (transvaginal ultrasonography) 2D/3D
- MRI
- MRI + 3D CT
- Hysteroscopy

### Treatment
- Conservative
- Oral contraceptive pills
- Intramyoma Drug Injection (ID)
- Oral contraceptive pills

### Surgical
- Hydrosurgical
- Vaginal
- Laparoscopic + vaginal
- Laparoscopic
- Laparotomy
- Robotic
- UAE (Uterine Artery Embolization)

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Our study

42 patients with the uterine-scar incompetence

Patients were divided in 4 groups:

1st – diagnostic hysteroscopy and laparoscopy (9)

2nd – hysteroscopy, laparoscopic repair of incompetence scar (12)

3rd – hysteroscopy, laparoscopic excision of incompetence-scar margins and repair in 2 layers of suture (18)

4th – diagnostic laparoscopy and hysteroscopic resection, coagulation (3).

Measurements and Main Results:

• mean age of patients was 29.6±3.9 years.
• 88.1% patients had a history of urgent cesarean section.
• 38 patients had abnormal uterine bleeding, pain, dyspareunia, and infertility.

Further studies are required for management of patients with uterine-scar incompetence after cesarean deliveries:

• development of criteria for the evaluation of the scar incompetence with the use of ultrasound and MRI;
• establishment of indications for repair;
• the approach to the selection of methods for treatment of uterine-scar insufficiency.

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Leila V. Adamyan, MD, Aleksander Yu Danilov, MD, Andrey V. Kozachenko, MD, Assia A. Stepanian, MD, Nikolay D. Khoroshun, MD, Patimat Khirieva, MD, Sergey A. Martynov, MD

Operative Gynecology Department, Scientific Center for Obstetrics, Gynecology and Perinatology
Moscow, Russian Federation
Thank you very much for your attention!
Laparoscopic Management of Interstitial Ectopic Pregnancy: A Novel Technique

Presenter: Rajkishor M. Sawant, MD
Sanjeevani Endoscopy Centre, Mumbai, Maharashtra

Objective: To demonstrate a novel, simple and easily replicable technique for surgical management of interstitial ectopic pregnancy to help reduce blood loss and allow precise reconstruction of the uterine cornua.

Design: Stepwise demonstration of the technique with a narrative accompanying video

Setting: Interstitial pregnancy accounts for 2-4% of ectopic pregnancies with a mortality rate in the range of 2-2.5%. Because of myometrial distensibility they tend to present relatively late (7-12 weeks). Conservative management with preservation of future childbearing is a challenge posed by interstitial pregnancy supplied by anastomosing branches from the ipsilateral ascending uterine and ovarian vessels, disallowing the surgeon the luxury of time during surgical intervention.

Interventions:
1) A ligature taken in the wedge under the junction of the tube with the uterine cornu in the broad ligament and another ligature taken along the course of the ascending branch of the uterine artery will effectively blanch the cornua temporarily.
2) Another purse string ligature around the base of the pregnancy going under the tube and pulled tight drains the remaining vascular supply and offers a steady hold stabilizing the delicate vascular cornua.
3) A linear cornuostomy extirpation of the pregnancy and destruction of chorion using short bursts of bipolar diathermy are performed.
4) Retrograde milking of the tube is done.
5) Simple sutures adequately close the defect.

Conclusion: Interstitial pregnancies have been conventionally been managed by laparotomy and involve resection of the cornua amounting to increased blood loss as well as distortion, weakening of the uterine myometrium and discontinuity of the cornuo tubal relation which may prove to be a hindrance in future conception. This method allows a satisfactory extirpation of pregnancy with minimal diathermy usage addressing two main concerns; residual trophoblastic tissue and uterine rupture in future pregnancy, preserving tubal continuity and myometrial integrity.
Laparoscopic Hysterotomy and Evacuation of a Second Trimester Fetal Demise

Presenter: Antonella Lavelanet, DO, JD, MPH
Boston Medical Center, Boston, Massachusetts

Objective: In the setting of a uterine anomaly and an undesired pregnancy or a fetal demise, the options of dilation and evacuation or induction of labor may not be possible. Our goal was to demonstrate another technique: laparoscopic hysterotomy and evacuation of pregnancy.

Design: Case Presentation.

Setting: Department of Obstetrics and Gynecology, Boston Medical Center.

Interventions: Laparoscopic hysterotomy and evacuation of demised pregnancy. The key principles in performing this procedure include:

- maintaining hemostasis with the use of vasopressin;
- creating a posterior hysterotomy to access the pregnancy and facilitate closure;
- attempt at removal of an intact placenta and fetus with thorough irrigation of the uterine cavity to reduce the risk of retained products of conception; and
- closure of the hysterotomy in multiple layers, especially in patients desiring future pregnancies.

Conclusion: Laparoscopic hysterotomy offers patients a minimally invasive surgical approach for evacuation of a demised pregnancy, in the setting of a uterine anomaly, when typical options may not be possible or are contraindicated.
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.

~