Plenary 3: Hysteroscopy

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Michael W.H. Suen, MD
Professional Education Information

Target Audience
This educational activity is developed to meet the needs of residents, fellows and new minimally invasive specialists in the field of gynecology.

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Plenary 3: Hysteroscopy

Moderators: Philip G. Brooks, Donald L. Chatman, Richard J. Gimpelson

Discussants: Aarathi Cholkeri-Singh, Jorge Dotto, Marit Lieng, Stephanie N. Morris, Kristen Sasaki, George A. Vilos

Faculty: Attilio Di Spiezio Sardo, Ayman Oraif, Chandrew Rajakumar, Crystal M. Santiago, Tarek Shokeir, Michael W.H. Suen

This session provides a group of advanced hysteroscopic techniques dealing with uterine anomalies and acquired abnormalities, along with several recommendations to make hysteroscopic procedures more effective.

Learning Objectives: At the conclusion of this course, the clinician will be able to: 1) Describe advanced indications; and 2) discuss additional surgical techniques to improve outcomes of hysteroscopic surgery.

Course Outline

2:15 A Single Injection of Depomedroxyprogesterone Acetate (Dmpa) Immediately After Rollerball Endometrial Ablation Significantly Improves Clinical Outcomes in Women With Heavy Menstrual Bleeding A. Oraif

2:21 Discussant A. Cholkeri-Singh

2:25 Accuracy of Hysteroscopic Metroplasty With the Combination of Pre-Surgical Three-Dimensional Ultrasonography and a Novel Graduated Intrauterine Palpator: A Randomized Controlled Trial A. Di Spiezio Sardo

2:31 Discussant K. Sasaki

2:35 Complications and Compliance of Hysteroscopic Sterilization With Essure in an Inner City Hospital C.M. Santiago

2:41 Discussant M. Lieng

2:45 Hysteroscopic Metroplasty in Women With Unexplained Primary Infertility: A Prospective Cohort Study T. Shokeir

2:51 Discussant G.A. Vilos

2:55 Video: Hysteroscopic Management of a Stenotic Cervix M.W.H. Suen

3:01 Discussant S.N. Morris

3:05 Video: Hysteroscopic Removal of Retained Placental Tissue Alliviates Postpartum Hypertension C. Rajakumar

3:11 Discussant J. Dotto

3:15 Adjourn
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Michael W.H. Suen*
George A. Vilos*

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A Single Injection ofDepomedroxyprogesterone Acetate (Dmpa) Immediately After Rollerball Endometrial Ablation Significantly Improves Clinical Outcomes in Women With Heavy Menstrual Bleeding

Ayman Oraif, MD,FRCSC

The Fertility Clinic, LHSC, Department of Obstetrics and Gynecology, Western University, London, Canada
Department of Obstetrics and Gynecology, King Abdulaziz University, Jeddah, Saudi Arabia

Objective:
Discuss clinical outcomes of DMPA in women with heavy menstrual bleeding

Background

• First generation endometrial ablation techniques (FEATs) were introduced in the 1980's as an alternative to hysterectomy to treat women with abnormal uterine bleeding from benign causes.

• These included endometrial laser ablation and radiofrequency rollerball/bar or transcervical resection of the endometrium (TCRE).


• Second generation endometrial ablation technologies (SEATs), also referred to as global endometrial ablation (GEA) or non‐hysteroscopic endometrial ablation (non‐HEA), were introduced in the 1990's as automated, easier, and safer alternatives to hysteroscopic endometrial ablation requiring less skill and could be performed in the office.


• The subsequent 30 % hysterectomy rate after endometrial ablation together with a high satisfaction rate of women who chose hysterectomy as 1st treatment of their AUB has raised some serious issues and concerns regarding the cost‐effectiveness, ongoing utilisation, and indeed the future of both hysteroscopic (HEA) and non‐hysteroscopic endometrial ablation (NHSEA) for the treatment of AUB.


Disclosure

I have no financial relationships to disclose.
Solutions to FEATs & SEATs

1. Go back to hysterectomy
   - Many gynecologists resort to hysterectomy for both as primary treatment of AUB and as the next logical step in women who fail primary endometrial ablation.
   - However, in spite of major technological advances in minimally invasive gynecological surgery, hysterectomy remains a major surgical procedure associated with significant morbidity, mortality, and health care costs and resources.

Potential Savior to FEATs & SEATs

2. Use adjunct Therapy
   - 1990 Townsend et al: 400 mg medroxyprogesterone given post rollerball ablation—amenorrhea rates at 6-12 months were 100% (25/25) vs. 40% (10/25) in study group and control group, respectively.
   - 1994 Jacobs and Blumenthal: injection of 150 mg DMPA post-TERA—amenorrhea rates at 6, 12 and >12 months were 66.7%, 59.3% and 55.6% compared to 34.4%, 31.3% and 26.1% in the DMPA group and control group, respectively.
   - 1995 Goldrath: injection of 150 mg DMPA after hysteroscopic endometrial photocoagulation with the Nd:YAG laser fiber—amenorrhea rates at >6 months post-ablation were 69% vs. 37% in the DMPA group and control group, respectively.

Objective: Adjunct Therapy

To determine patient satisfaction and the clinical effectiveness of a single dose of Depo Medroxyprogesterone Acetate (DMPA) injection immediately after rollerball endometrial ablation (REA) in women with heavy menstrual bleeding (HMB).

Proposed Mechanism of Action of DMPA

- Progesterone down regulates estrogen receptors.
- When progesterone is given in the form of DMPA injection, its effect lasts 3 months.
- By decreasing/eliminating the influence of estrogen on any residual endometrium through receptor down-regulation for 3 months, any residual/non-ablated endometrium may atrophy/die or scar down before unopposed estrogen can revitalize it.

Materials and Methods

- 83 women received a single dose of DMPA 150 mg, IM, immediately after REA.
- Inclusion criteria: Women receiving REA for HMB with a normal uterine cavity and normal endometrial biopsy pre-operatively.
- Endometrium was ablated using a 28F (9 mm) resectoscope with a 5 mm rollerball, 1.5% glycine and 120 w of power.
- Outcomes were compared with a historical control group (n=47) who had REA only.

Baseline Characteristics

<table>
<thead>
<tr>
<th></th>
<th>REA + DMPA</th>
<th>REA Only</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>42.6 (25.55)</td>
<td>40.7</td>
</tr>
<tr>
<td>Parity</td>
<td>2.1 (0-6)</td>
<td>1.9</td>
</tr>
<tr>
<td>BMI</td>
<td>27.2 (19.45)</td>
<td>27.7</td>
</tr>
</tbody>
</table>
Results on Menstrual Blood Loss

<table>
<thead>
<tr>
<th>Results of REA and DMPA at 12 months (N=77)</th>
<th>REA + DMPA (N=77)</th>
<th>REA Only (N=47)</th>
<th>P Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Amenorrhea</td>
<td>75.3% (58)</td>
<td>31.9% (15)</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td>Spotting</td>
<td>13.0% (10)</td>
<td>17.0% (8)</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td>Hypomenorrhea</td>
<td>9.1% (7)</td>
<td>34.0% (16)</td>
<td>&lt;0.05</td>
</tr>
<tr>
<td>No change</td>
<td>1.3% (1)</td>
<td>17.0% (8)</td>
<td>&lt;0.05</td>
</tr>
</tbody>
</table>

Main clinical outcomes at 12 months

Conclusions

1. A single injection of DMPA concomitantly with REA produces a significant increase in menstrual reduction (amenorrhea rate) and a decrease in the rate of re-intervention for HMB at 12 months.

Further corroboration of these findings using different ablation methods and through RCT may be a game changer in the management of HMB.

References
Accuracy of hysteroscopic metroplasty with the combination of pre-surgical three-dimensional ultrasonography and a novel graduated intrauterine palpator: A randomized controlled trial

Attilio Di Spiezo Sardo, MD, PhD
University of Naples “Federico II”
Italy

OBJECTIVES

• Discuss the accuracy of hysteroscopic metroplasty

DISCLOSURE

• Consultant:
  • Bayer Healthcare Corp.,
  • Johnson & Johnson,
  • Karl Storz
Pre-surgical three-dimensional transvaginal ultrasonography (3D-TVS)

5 Fr graduated intrauterine palpator

Possibility to measure the depth of section

**Objectives**

**Materials and Methods**

Pre-surgical assessment of uterine cavity

HSC  3D-TVS

Post-surgical assessment of uterine cavity

HSC  3D-TVS

**Group T**

**Group C**

**Metroplasty with miniature instruments**

**Key Points**

- Begin at the apex
- Latero-lateral direction
- Resection with 5 Fr bipolar electrode in pulsed mode
- Finishing touch of the base of septum with 6Fr scissors

**Results (1)**

<table>
<thead>
<tr>
<th></th>
<th>Group T</th>
<th>Group C</th>
<th>RR</th>
<th>95% CI</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Optimal</td>
<td>32 (71.5%)</td>
<td>19 (41.2%)</td>
<td>1.684</td>
<td>1.116-2.506</td>
<td>0.006</td>
</tr>
<tr>
<td>Suboptimal</td>
<td>13 (28.5%)</td>
<td>14 (31.1%)</td>
<td>0.929</td>
<td>0.457-1.874</td>
<td>1.0</td>
</tr>
<tr>
<td>Incomplete</td>
<td>0</td>
<td>0</td>
<td>0.392</td>
<td>&lt;0.0001</td>
<td></td>
</tr>
</tbody>
</table>
RESULTS (2)

OPTIMAL

INCOMPLETE

CONCLUSIONS

3D- TVS

Graduate intrauterine palpator

Pre-surgical assessment

Intraoperative (objective) data

ONE SURGICAL STEP

REFERENCES
Complications and Compliance of Hysteroscopic Sterilization with Essure in an Inner City Hospital

Crystal Santiago, M.D.

Lincoln Medical and Mental Health Center
Department of Obstetrics and Gynecology
Bronx, New York

I have no financial relationships to disclose

OBJECTIVES

• Discuss real life experience with Essure compared to initial FDA studies
  – Complications
  – Failure of placement
  – Subsequent pregnancies
• Follow up compliance rate in an inner city, high immigrant population

Overview:

• Objective: assess complications from Essure sterilization and compliance rate for follow up with 3 month Hysterosalpingogram (HSG)
• Design: Retrospective chart review
• Setting: Academic affiliated community hospital
• Patients: All patients with attempted hysteroscopic Essure sterilization from January 2008 through August 2014

Measurements & Main Results:

• 175 procedures attempted on 173 patients
• Demographics
  – 151 (87.3%) Hispanic
  – 19 (11.0%) African/African-American
  – 3 (1.7%) Asian
  – Average age 35 years
  – Average parity of 3
  – Body mass index (BMI) of 29.0 kg/m²
  – Average surgical time 37 minutes
  – Estimated blood loss 5 mL

Measurements & Main Results:

• Of the 175 procedures, 16 (9.1%) were incomplete
  – 4 unilateral placements
    • Only able to visualize single ostium and placed
      • 1 returned for successful placement in other tube
  – 7 aborted procedures
    • 5 unable to pass into 1 or both ostia
      – 1 due to tubal spasm
    • 1 proliferative endometrium, poor visualization
    • 1 device misfired on 3 attempts
      • 1 returned for successful placement bilaterally
  – 5 converted to laparoscopic sterilization
    • 3 unable to visualize 1 or more ostia
    • 2 tubal spasm
Measurements & Main Results:

- Of the 161 successful bilateral Essure placements
  - 99 (62%) patients had HSG performed
    - 84 (85%) no spillage bilaterally
    - 14 (14%) with unilateral/bilateral spillage
    - 1 (1%) incomplete studies
  - 62 (39%) patients did not have HSG
    - 35 (57%) failed to keep appointment
    - 16 (25%) HSG orders were cancelled from the system upon discharge (system error)
    - 10 (16%) had no HSG order placed
    - 1 (2%) has a pending appointment

Conclusions:

- Failure rate of Essure placement at first attempt
  - 9.1% in our patients
  - 14% in Pivotal study
- Post procedure HSG noncompliance rate
  - 38% in our patients
  - 4.4% in Pivotal study, 3.0% in Phase II study
- The rate of initial tubal patency on HSG
  - 14.1% in our patients
  - 3.5% from both Phase II and Pivotal studies
- Post procedure pregnancy rate
  - 1.2% over the 8 years for our patients
  - 0.2% over 2 years from Essure studies

Measurements & Main Results:

- Of the 161 successful bilateral Essure placements
  - 3 (1.8%) had subsequent pregnancies
    - 2 (1.2%) with confirmed bilateral blockage on HSG
    - 1 (0.6%) had no HSG performed

Conclusions:

- Expulsion rate
  - 1.2% for our patients
  - 2.9% for Pivotal study, 0.5% for Phase II study
- Perforation
  - 0% for our patients
  - 2.9% for Phase II study, 1.1% for Pivotal study
  - Tubal spasm rate: 1.7% of our procedures
- Phase 2:
  - Recall process for all previous procedures (secondary analysis)
  - Up to date log of new procedures
  - Fix system error of disappearing HSG appointments
- Goals:
  - Improve compliance with HSG follow up
  - Decrease complication rates

REFERENCES

Hysteroscopic metroplasty in women with unexplained primary infertility: A prospective cohort study

Tarek Shokeir, MD
Mansoura University, Egypt

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Objectives
• To evaluate the effect of hysteroscopic metroplasty as therapy for unexplained primary infertility in women with uterine septum as a possible sole cause for reproductive failure.
• To define the factors influencing reproductive success.

Objectives (contin.)
• Discuss clinical pregnancy rate (PR) according to patient and septum characteristics using HSG were the main outcome measures.

Materials and methods
• From August 2011 through December 2014 we enrolled 103 infertile women with uterine septum as a possible sole cause for unexplained primary infertility.
• Uterine anomalies were diagnosed by hysterosalpingography (HSG) and transvaginal sonography (TVS). Diagnosis was further confirmed by office hysteroscopy.

Materials and methods (contin.)
• Electrosurgical hysteroscopic metroplasty was performed in the early follicular phase, under general anesthesia with no preoperative endometrial preparation.
Materials and methods (contin.)

• Only patients with follow-up of at least 12 months duration are discussed in this study.

• Clinical pregnancy rate (PR) according to patient and septum characteristics defined by HSG (*septum length*) were the main outcome measures.

Results

• Follow-up was complete for 88 patients.

• Forty-two patients became pregnant (40.7%).

• There was short delay to conception (mean ± SD time to conception was 7.5 ± 6.2 months).

• Of 44 pregnancies in 42 women, 36 live newborns were delivered.

Authors’ Conclusions

• Fertility and pregnancy after hysteroscopic metroplasty in women with otherwise unexplained primary infertility and uterine septum as a possible *sole cause* for reproductive failure seems to depend on patient age, duration of infertility, and uterine septum length.

• Women with a *septum size larger than one-half of their uterine length* have a higher chance of successful pregnancy after hysteroscopic metroplasty.
Hysteroscopic Management of a Stenotic Cervix

Michael W.H. Suen, MD
University of British Columbia, Vancouver, British Columbia, Canada

Objective: To demonstrate a “see-and-treat” approach in an outpatient hysteroscopy setting for management of a stenotic cervix.

Design: Stepwise demonstration of the technique with narrated video and animations.

Setting: Cervical stenosis is defined as narrowing of a cervix os with difficulty inserting a 2.5mm dilator. It is found most commonly in nulliparous and postmenopausal women, and can obstruct a number of gynecologic procedures that require intrauterine access. Technical difficulty increases the risk of cervical laceration, uterine perforation and the formation of false passages, which can worsen cervical scarring and lead to failure of a procedure. Outpatient hysteroscopy shows operative success with patient satisfaction, and can be used to overcome a stenotic cervix to complete an intended procedure.

Interventions: Hysteroscopic management of a stenotic cervix involves:

1. Optimizing the surgical environment
2. Vaginoscopy and “no-touch” hysteroscopy
3. Revision of the cervical canal, with microscissors, micrograspers or a cutting loop electrode.

Conclusion: A number of strategies can be utilized when faced with a stenotic cervix. This video demonstrated the ease of a “see-and-treat” approach in an outpatient hysteroscopy setting.
Objective: Through office hysteroscopy identify an intrauterine cause for postpartum hypertension in a woman who had completed a pregnancy complicated by HELLP syndrome. Secondly, ameliorate the hypertension and dependence on antihypertensive medications through hysteroscopic-guided removal of retained placental fragments.

Design: Case report

Setting: Outpatient hysteroscopy suite and operating theater at university affiliated teaching hospitals

Interventions: Vaginoscopy followed by diagnostic hysteroscopy without sedation to confirm the presence of placental tissues within the uterine cavity followed by hysteroscopically-guided blunt curettage of placental tissues using a non-energized loop electrode.

Conclusion: Diagnostic hysteroscopy, when performed after vaginoscopy, allows of confirmation of retained placental fragments via biopsy without the need for sedation and can be performed in an outpatient setting. Visually guided removal of retained placental tissue fragments provided relief from post-partum hypertension and cessation of antihypertensive medications within 48 hours from the procedure. Furthermore, this technique replaces blind curettage, which may increase the risk of intrauterine synechiae and/or perforation.
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).

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**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.

If you add staff to assist with LEP patients, confirm their translation skills, not just their language skills. A 2007 Northern California study from Sutter Health confirmed that being bilingual does not guarantee competence as a medical interpreter. [http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=2078538](http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=2078538).