Plenary 6 – Reproductive Issues

MODERATORS
G. David Adamson, MD & Patrick P. Yeung, MD
Christopher Allphin, MD
Herve Fernandez, MD
Perrine Capmas, MD
Anna Lyapis, MD
Caterina Exacoustos, MD
Rosa M. Neme, MD, PhD
Professional Education Information

Target Audience
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Plenary 6 – Reproductive Issues

Moderators: G. David Adamson and Patrick Yeung
Faculty: Christopher Allphin, Perrine Capmas, Caterina Exacoustos, Herve Fernandez, Anna Lyapis, Rosa M. Neme

This session provides some of the latest data on issues important for fertility and reproduction, including: imaging modalities and techniques of evaluation of female anatomy – particularly the fallopian tubes, and of the effect of bowel resection and reanastomosis on fertility. There is an on-going search for less invasive ways to evaluate the female reproductive anatomy, and the impact of bowel resection on fertility (separate from pain) is not well documented, and the need for methotrexate after salpingectomy for ectopic pregnancy is not well characterized. Innovative techniques, and the latest studies address these issues.

Learning Objectives: At the conclusion of this course, the clinician will be able to: 1) Discuss the latest minimally invasive techniques to image and evaluate the fallopian tubes; 2) discuss the impact on bowel resection and reanastomosis for DIE on fertility; and 3) discuss the impact of postoperative methotrexate after salpingectomy for ectopic pregnancy.

Course Outline

12:05  Fertility Outcome after Laparoscopic Segmental Bowel Resection for Endometriosis  R.M. Neme
12:15  Accuracy of Hysteroscopic Versus Laparoscopic Chromopertubation for Assessment of Tubal Patency  A. Lyapis
12:25  Ectopic Pregnancy: A Prospective Cohort on Conservative Surgical Management with Systematic Postoperative Injection of Methotrexate  P. Capmas
12:35  The Efficacy and Cost Effectiveness of a Combined Laparoscopic and Hysteroscopic Approach in the Treatment of Female Infertility  C. Allphin
12:45  Proximal Occlusion of Hydrosalpinges by Essure® before In Vitro Fertilization: A French Survey  H. Fernandez
12:55  Three-Dimensional Sonographic Assessment of Tubal Patency with Gel Foam: Hysterosalpingo-Foam Sonography  C. Exacoustos
1:05  Closing Remarks/Adjourn
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The following members of AAGL have been involved in the educational planning of this workshop and have no conflict of interest to disclose (in alphabetical order by last name).
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Consultant: Conceptus Incorporated
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G. David Adamson
Grants/Research: Auxogyn
Christopher Allphin*
Perrine Capmas*
Caterina Exacoustos*
Herve Fernandez*
Ama Lyapis*
Rosa M. Neme*
Patrick P. Yeung
Consultant: Lumenis
Asterisk (*) denotes no financial relationships to disclose.
Fertility outcome after laparoscopic segmental bowel resection for endometriosis approach

Dr. Rosa Maria Neme, MD, PhD
University of Sao Paulo, Brazil
2013

Disclosure
I have no financial relationships to disclose.

Introduction
• Bowel endometriosis is the most severe forms of the disease that accounts for 3.8 to 37% of women with endometriosis - rectum and rectosigmoid - 70% to 93%
• Infertility, chronic pelvic pain, pain at defecation, and altered quality of life
• Infertility >40% of women - anatomical abnormalities of genital organs, functional alterations of peritoneal environment
• Several studies have confirmed the feasibility of colorectal resection for endometriosis and its efficiency to relief symptoms and improve fertility rates of up to 50%

Material and Methods
• From July 2009 to July 2012 – Prospective study
• 250 women submitted to segmental bowel resection for endometriosis referred to private clinic
• 92% had bowel symptoms as pain during evacuation, diarrhea, constipation, abdominal bloating, and/or dyschezia
• 62% had an associated infertility
Material and Methods

- Diagnosis: clinical examination and transvaginal sonography with bowel preparation

Endometriosis evolving at least the internal muscularis of the rectum

Material and Methods

- Mean age – 32.3 years (range 24–41 years)
- Mean BMI - 23 (range 18–35)
- Median duration of infertility before surgery was 18 months (range, 12–30 months)
- 78% (121 women) underwent some infertility treatment (IUI or IVF) before surgery
- 18% had an associated male infertility

Material and Methods

- Previous pelvic surgery – 69%
- Symptom: dysmenorrhoea, non-menstrual pelvic pain and dyspareunia, diarrhea and/or constipation, pain on bowel movement, intestinal cramping, pain on defecation, tenesmus and cyclic rectal bleeding, lower back pain and asthaenia

Surgical Technique

Results

- Mean operative time -117 minutes (range 80-190)
- SURGERY
  - Extensive ureterolysis (80%)
  - Ovarian cystectomy (70%)
  - Sinus resection (100%)
  - US ligament (10%)
- Partial vaginal resection (20%)
- Appendectomy (20%)

- 96 (62%) pregnancies were obtained
  - 71 spontaneous (74%) and 25 by IVF (26%)
- Median time to conceive was 8 months. Four patients had miscarriage.
- No blood transfusion
- None intra-operative or post-operative complications
- Length of stay - 3 days

Evolution of symptoms and quality of life

- Mean follow-up - 6 months

- Symptoms: dysmenorrhoea, dyspareunia and pain on defecation, intestinal cramping, diarrhea or constipation disappeared in all women after colorectal resection
Histology

Stromal and glandular endometriosis

Conclusion

• Segmental laparoscopic bowel resection for endometriosis in symptomatic women with associated infertility is feasible, effective, and safe and offers high pregnancy rates.

www.endometriosesp.com.br
rosa@endometriosesp.com.br
Accuracy of Hysteroscopic Versus Laparoscopic Chromopertubation for Assessment of Tubal Patency

Anna Lyapis, MD
Danielle Luciano, MD
Anthony Luciano, MD
The Hospital of Central Connecticut
in affiliation with University of Connecticut
November, 2013

DISCLOSURE

I have no financial relationships to disclose.

OBJECTIVES

• Review literature on evaluation of tubal patency
• Demonstrate the technique of hysteroscopic chromopertubation
• Describe our study design
• Evaluate accuracy data
  – Hysteroscopic versus laparoscopic assessment

LITERATURE REVIEW

<table>
<thead>
<tr>
<th></th>
<th>Laparoscopy</th>
<th>HSG</th>
<th>HYCOSY</th>
<th>Hysteroscopy</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensitivity</td>
<td>75-96%</td>
<td>67-96%</td>
<td>72-88%</td>
<td>83%</td>
</tr>
<tr>
<td>Specificity</td>
<td>67-100%</td>
<td>71-94%</td>
<td>68-89%</td>
<td>82%</td>
</tr>
<tr>
<td>PPV</td>
<td>72-94%</td>
<td>50-92%</td>
<td>70-94%</td>
<td>88%</td>
</tr>
<tr>
<td>NPV</td>
<td>50-96%</td>
<td>83-96%</td>
<td>58-76%</td>
<td>77%</td>
</tr>
</tbody>
</table>

HYSTEROSCOPIC CHROMOPERTUBATION

HYSTEROSCOPIC CHROMOPERTUBATION

PATENT TUBE

OCCLUDED TUBE
STUDY DESIGN

• Prospective analysis
• 54 patients undergoing concomitant hysteroscopy and laparoscopy
• March 2012 through March 2013
• Exclusion:
  – Age < 18 years old
  – Malignant condition
  – Pregnancy
  – Active Pelvic Inflammatory Disease

RESULTS

<table>
<thead>
<tr>
<th>Test (occurred on hysteroscopy)</th>
<th>Test (patent on hysteroscopy)</th>
</tr>
</thead>
<tbody>
<tr>
<td>+ Disease (tube occluded on laparoscopy)</td>
<td>a 9</td>
</tr>
<tr>
<td>- Disease (tube patent on laparoscopy)</td>
<td>b</td>
</tr>
<tr>
<td>+ Disease (tube occluded on laparoscopy)</td>
<td>c</td>
</tr>
<tr>
<td>- Disease (tube patent on laparoscopy)</td>
<td>d 82</td>
</tr>
</tbody>
</table>

Sensitivity: \( \frac{a}{a+c} = \frac{9}{14} = 64.3\% \)
Specificity: \( \frac{d}{d+b} = \frac{82}{85} = 96.5\% \)
Positive predictive value: \( \frac{a}{a+b} = \frac{9}{12} = 75.0\% \)
Negative predictive value: \( \frac{d}{d+c} = \frac{82}{87} = 94.3\% \)

How Do Our Results Compare?

<table>
<thead>
<tr>
<th>Laparoscopy</th>
<th>HSG</th>
<th>HECOSY</th>
<th>Hysteroscopy</th>
<th>Our Study</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sensitivity</td>
<td>75-96%</td>
<td>67-96%</td>
<td>72-88%</td>
<td>83%</td>
</tr>
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<td>56-76%</td>
<td>77%</td>
</tr>
</tbody>
</table>

REFERENCES

• Tamasi F et al.. J Ob Gynecol 121:186-90, 2005.

CONCLUSIONS

• Hysteroscopic chromopertubation has poor sensitivity
• By using this test, we would call an occluded tube “patent” in 35.7%  
• Hysteroscopic chromopertubation has excellent specificity
• By using this test, we would call a patent tube “occluded” in 3.5%
QUESTIONS

THANK YOU!
ECTOPIC PREGNANCY: a prospective cohort on conservative surgical management with systemic postoperative injection of methotrexate

Perrine CAPMAS (MD)
Bicetre hospital - France

Objectives

- Report failure of conservative surgery
  = SALPINGECTOMY RATE

- Report failure of surgery
  = PERSISTENT TROPHOBLAST

Methods

- Prospective data from a randomized trial
- Conservative surgery with postoperative injection of methotrexate (1mg/kg)
- Statistic:
  - Student’s test
  - Chi2 test
  - Logistic regression model

Results

- 196 women
  - 96 with less active EP
  - 100 with active EP
- Initial salpingectomy rate=15%
- Persistent trophoblast=0.6% [0-1.8%]
Flow chart

- 196 women with ectopic pregnancy
  - Radical surgery: 181 (92%)
  - Conservative surgery: 15 (8%)

- 166 women with conservative surgery
  - 141 (85%) with conservative surgery and systematic injection of MTX
  - 25 (15%) with no injection of MTX

- MTX failure (0.7%)

Salpingectomy rate

- No failure

Radical surgery: n=30 (15%)

Discussion

- Initial failure of conservative surgery
  - First time reported in an important population
  - Very high
  - Depending on activity of ectopic pregnancy (HCG – progesterone)

- Low rate of persistent trophoblast after postoperative methotrexate injection is confirmed in current practice
  - As in randomized trial
  - Interesting when persistent trophoblast is more than 7%

Conclusion

- Women has to be inform of the high risk of radical surgery even when a conservative surgery us decided
- Postoperative injection of methotrexate is confirmed to avoid persistent trophoblast

Bibliography

Minimally invasive gynecologic surgery (MIGS) involves vaginal surgery, laparoscopy and hysteroscopy. It involves small or no incisions and continues to define the role for MIGS in all facets of an Ob/Gyn practice. Laparoscopy and hysteroscopy at the same operating room visit are performed by two different surgeons at the same time. The treatment of patients with uterine pathology such as leiomyomata or septa is becoming more common. There is no current literature involving a dual procedure and pregnancy rates.
**Study Objectives**

- Is there a role for MICS, specifically the dual procedure, in a sub-fertile population seeking pregnancy?
- **Hypothesis:** The dual procedure will diagnose and treat uterine pathology helping women achieve pregnancy with similar rates to a fertile population
- Cost analyses: The dual procedure will cost less than if the procedures were done at separate O.R. admissions

**Patients**

- Patients that had the dual procedure from 2007-2012 at a MICS clinic
- Narrowed down to only patients referred to the MICS clinic from fertility specialists
- All the patients had a complete fertility workup and had abnormal findings on ultrasound
- 30 patients were found that met the criteria since 2007.

**Materials**

- 23 chart reviews were completed between the infertility offices and the electronic medical record.
- The remaining 7 patients were contacted by telephone and asked about pregnancy results before and after the procedure.
- 13 patients had a septum and 17 patients had leiomyomata

**Interventions**

<table>
<thead>
<tr>
<th>Pathology</th>
<th>Procedure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Septum</td>
<td>Hysteroscopic metroplasty with diagnostic laparoscopy</td>
</tr>
<tr>
<td>Leiomyomata</td>
<td>Diagnostic laparoscopy with hysteroscopic and/or laparoscopic myomectomy</td>
</tr>
</tbody>
</table>

**Results**

- 21/30 (70%) patients were able to achieve pregnancy
- Live birth rate of 54% (17/30)
- Miscarriage rate of 17% (5/30)
- 21 live births, 2 sets of twins
- 5 patients were able to conceive twice

**Conception**

- 14 spontaneous pregnancies including one twin pregnancy
- 4 IUI pregnancies
- 7 IVF pregnancies
### Age

<table>
<thead>
<tr>
<th>Age range (n)</th>
<th>Pregnancy Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;35 (13)</td>
<td>82%</td>
</tr>
<tr>
<td>35-40 (9)</td>
<td>62.5%</td>
</tr>
<tr>
<td>Age &gt; 40 (8)</td>
<td>60%</td>
</tr>
</tbody>
</table>

### Type of Pathology

<table>
<thead>
<tr>
<th>Pathology</th>
<th>Procedure</th>
<th>Pregnancy rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Septum</td>
<td>Hysteroscopic metroplasty with diagnostic laparoscopy</td>
<td>84.6% (11/13 pts)</td>
</tr>
<tr>
<td>Leiomyomata</td>
<td>Hysteroscopic and laparoscopic myomectomy</td>
<td>58.8% (10/17 pts)</td>
</tr>
</tbody>
</table>

### Cost analysis

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Average cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laparoscopy and hysteroscopy at different admissions</td>
<td>$38,256.70</td>
</tr>
<tr>
<td>Dual procedure, one admission</td>
<td>$23,185.34</td>
</tr>
</tbody>
</table>

- Average of $15,000 saved per every patient that had the dual procedure at the same visit.
- 30 patients saved the system $450,000.

### No Pregnancy

- 2 patients had no antral follicles at the return to the fertility specialist
- 2 patients attempted one cycle of IVF then discontinued therapy
- 3 patients continue to go through IVF cycles
- 1 patient has postponed attempting conception until finishes her masters
- 1 patient discontinued after 2 cycles of IUI

### Conclusion

- MIGS, specifically hysteroscopy and laparoscopy, is an excellent tool to offer to patients with infertility for diagnosis and treatment of uterine pathology
- After treatment, many of these patients can achieve pregnancy spontaneously without the use of assisted reproductive technology (ART)
- Significant cost savings are achieved if the procedures are done at the same time

### Study Weaknesses

- Retrospective case review
- Low number of patients
- No standardization of follow up time
Thank You!
Proximal occlusion of hydrosalpinges by Essure® before assisted reproduction techniques: a French survey.

Hervé FERNANDEZ

Service de Gynécologie-Obstétrique, Assistance publique des hôpitaux de Paris- Hôpital de Bicêtre78 rue du général Leclerc, 94275 Le Kremlin-Bicêtre, France

Introduction

• Hydrosalpinx halves the pregnancy rate after IVF of women with tubal infertility
• Numerous authors have demonstrated that salpingectomy can correct this effect by increasing the likelihood of clinical pregnancy
  — Kontoravdis A. Fertil Steril 2006
  — Moshin V & al.Hum Reprod 2006

Introduction (2)

• Proximal tubal occlusion by laparoscopy has an effect similar to that of salpingectomy
  — Moshin V & al. Hum Reprod 2006
• The surgical risk during laparoscopy, especially for women with major pelvic adhesions, has led some surgeons to use Essure® for hysteroscopic tubal occlusion, an off-label use different from its primary purpose of tubal sterilization.

Study Objectives

• To study the feasibility and results (live-birth and complication rates) of the placement of Essure® microinserts before assisted reproduction technology (ART) treatment of women with hydrosalpinx.

Material and methods

• National survey of 45 French hospital centers providing ART treatment, with a retrospective analysis of all women with unilateral or bilateral hydrosalpinges.

Disclosure

I have no financial relationships to disclose.
Results

- Of the 45 centers contacted, 7 centers responded that they had performed such procedures, and 23 that they had not, for an overall response rate of 66.6% (30/45). Fifteen centers did not respond, despite four reminders.

Results (2)

- The placement success rate reached 92.8% (65/70 tubes), and the mean number of visible intrauterine coils was 1.61 (range: 0 to 6).
- Pyosalpinx occurred in one case, and expulsion of the device into the uterus in two others.
- Of 43 women, 29 (67.4%) had a total of 54 fresh or frozen embryos transferred.
- The clinical pregnancy rate was 40.7% (22/54) and the live-birth rate 25.9% (14/54).
- The implantation rate was 29.3% (27/92).

Conclusion

- Use of the Essure® system is an effective method for occlusion of hydrosalpings. The live-birth rate after embryo transfer makes it the method of choice when laparoscopy should be avoided, with rates similar to those for salpingectomy or tubal ligation.

Bibliography

- Strandell A, Gotteland A. Hydrosalpinx and IUI: salpingectomy prior to IUI can be recommended to a well-defined subgroup of patients. Hum Reprod 2000;15(10):2072-2074.
Three dimensional sonographic assessment of tubal patency with gel foam: Hysterosalpingo-foam sonography HyFoSy

Caterina Exacoustos MD,

University degli Studi di Roma ‘Tor Vergata’
Department of Biomedicine and Prevention Obstetrics and Gynecology

Università degli Studi di Siena
Department of Molecular and Developmental Medicine Obstetrics and Gynecology
ITALY

Disclosure

I have no financial relationships to disclose.

HyCoSy with air+saline benefits:
- Reproducible and simple technique
- Office procedure
- Used in combination with ultrasound imaging
- Less need for radiology
- No exposure to ionizing radiation
- No anesthesia required
- Low economic costs
- Reduced discomfort for patient
- Well tolerated by patients
- No adverse reactions to contrast
- ‘Real time’ diagnosis of tubal patency
- Accuracy is similar to HSG

HyCoSy limitations and difficulties encountered with conventional 2D TVS with air-saline or with ultrasound dedicated contrast media:
- Signals from the total length of the tube has rarely been depicted in a single scanning plan because of tubal tortuosity
- Need of skill examiner:
  - To see tubal course
  - To mentally reconstruct an image of the tube from partial visualization
  - To repeat manipulation of the transducer and injection of saline to obtain tubal course visualization

Aim of the study

- to assess the feasibility of three dimensional (3D) hystero-salpingo-contrast-sonography (TVS HyCoSy) with gel foam (HyFoSy) in the evaluation of tubal patency and visualization of tubal course.

Study population

144 patients undergoing TVS HyFoSy
- 12 with hysteroscopic tubal sterilization
  - at least after 3 months of ESSURE application
  - during the proliferative phase of the cycle (day 5-12) or at any time of the cycle if on OC
  - informed written consent was obtained from all patients
- 132 infertile patients
  - during the proliferative phase of the cycle (day 5-12).
  - informed written consent was obtained from all patients

All underwent:
- Evaluation of the reproductive history
- 2D and 3D TVS scan (Voluson E6 ultrasound machine (GE Healthcare, Zipf, Austria)
- TVS HyFoSy with 3D and 2D and gel foam as ultrasound contrast agent
- Evaluation of feasibility of the method
- Evaluation of pain during and after the procedure
**Methods**

To evaluate the feasibility of the method we considered:

- visualisation with 3D TVS of tubal patency or occlusion at two consecutive injections of gel foam;
- visualisation of the gel foam around the ovaries;
- final results of tubal patency after detection in 2D TVS realtime of the foam bubbles movement in the tube and around the ovaries;
- pain during and after the procedure (0-10 VAS scale);
- other side effects (vagal reactions, need of analgesic drugs).

**Methods**

- 3D HyFoSy TVS volume acquisition was performed:
  - during the first injection of 4-6ml gel foam
  - during the following second injection of 4-6ml gel foam

- 2D realtime TVS was performed during further injection of gel foam to detect foam and bubbles movements
  - in the tubes
  - around the ovaries

---

### Sterile gel

 manière de détection (hydroxyethylcellulose, glycerol and purified water)

- ExEm® gel, Farco-Pharma GmbH, Köln, Germany
- ExEm gel is FDA approved for uterine intracavity ultrasound imaging and gel infusion sonography (GIS), ExEm Foam for HyCoSy is not yet FDA approved
- ExEm gel and ExEm Foam are both CE marked, on lable for GIS and HycoSy

- 5ml of sterile gel+10ml purified water or saline+3-5ml of air by mixing sterile gel and purified water or saline a gel foam is created.
- 5 fr HyCoSy balloon catheter

---

### Results

132 infertile patients

- 72 had primary infertility
- 60 had secondary infertility

  **Mean age**: 36.8 yrs (24-44)
  **Gravidity**: 0.71 (0 - 5)
  **Parity**: 0.24 (0-2)
  **BMI**: 21.9 (16.0 - 27.9)

12 with hysteroscopic tubal sterilization

  **Mean age**: 41.6 yrs (34-49)
  **Gravidity**: 2.25 (0 - 4)
  **Parity**: 1.75 (0-3)
  **BMI**: 22.5 (17.7 - 25.9)

---

### HyCoSy with Gel Foam = HyFoSy

2D

3D
### Results

#### CONCORDANCE RATE

<table>
<thead>
<tr>
<th>Tubal patency status</th>
<th>1st 3D volume acquisition</th>
<th>2nd 3D volume acquisition</th>
<th>Final results after 2D realtime</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bilaterally patent nr pts (%)</td>
<td>88</td>
<td>105</td>
<td>108</td>
</tr>
<tr>
<td>Bilaterally occluded nr pts (%)</td>
<td>8</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>Unilaterally occluded nr pts (%)</td>
<td>36</td>
<td>24</td>
<td>22</td>
</tr>
<tr>
<td>Concordance rate to final 2D real-time results</td>
<td>112 (64.8%)</td>
<td>129 (67.1%)</td>
<td>132</td>
</tr>
<tr>
<td>Patent tubes nr tubes (%)</td>
<td>211</td>
<td>244</td>
<td>238</td>
</tr>
<tr>
<td>Occluded tubes nr tubes (%)</td>
<td>52</td>
<td>29</td>
<td>26</td>
</tr>
<tr>
<td>Concordance rate to final 2D real-time results</td>
<td>236 (88.7%)</td>
<td>259 (88.4%)</td>
<td>263</td>
</tr>
</tbody>
</table>

- 1 patients with unicorne uterus
- Salpingectomy for ectopic was considered as present-occluded tube

### Results

#### CONCORDANCE RATE

<table>
<thead>
<tr>
<th>Tubal patency status</th>
<th>1st 3D volume acquisition</th>
<th>2nd 3D volume acquisition</th>
<th>Final results after 2D realtime</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bilaterally patent nr pts (%)</td>
<td>0</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Bilaterally occluded nr pts (%)</td>
<td>11</td>
<td>10</td>
<td>10</td>
</tr>
<tr>
<td>Unilaterally occluded nr pts (%)</td>
<td>1</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Concorance rate to final 2D real-time results</td>
<td>11 (91.6%)</td>
<td>12 (100%)</td>
<td>12</td>
</tr>
<tr>
<td>Patent tubes nr tubes (%)</td>
<td>1</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>Occluded tubes nr tubes (%)</td>
<td>23</td>
<td>22</td>
<td>22</td>
</tr>
<tr>
<td>Concorance rate to final 2D real-time results</td>
<td>23 (95.8%)</td>
<td>24 (100%)</td>
<td>24</td>
</tr>
</tbody>
</table>

### Results

#### EVALUATION OF PAIN

<table>
<thead>
<tr>
<th></th>
<th>12 infertility pts</th>
<th>12 pts tubal sterilization</th>
</tr>
</thead>
<tbody>
<tr>
<td>VAS mean score nr pts (%)</td>
<td>6.3 ± 1.9</td>
<td>4.4 ± 2.5</td>
</tr>
<tr>
<td>AFTER HyFoSy</td>
<td>5.1 ± 2.5</td>
<td>0.9 ± 1.9*</td>
</tr>
<tr>
<td>Vagal reactions</td>
<td>1 (0.8%)</td>
<td>0 (0%)</td>
</tr>
<tr>
<td>Analgesic drug</td>
<td>19 (14.4%)</td>
<td>0 (0%)</td>
</tr>
</tbody>
</table>

### Conclusions

After two 3D volume acquisition we obtained 97.8% of final results for tubal patency.

3% of tubes which results occluded are patent after other injections.

Pain at HyFoSy is less when tubes were occluded.

Many disadvantages associated to 2D HyCoSy are overcome by means of the 3D HyFoSy:

- Automated 3D volume acquisition show the tubal course in the space.
- Echogenicity of the gel foam is visualized clearer and more persistent compared to air bubbles.
- The 3D volume acquisition during HyFoSy is static and avoids difficult probe movements and easier to perform also by less experienced of the operator.
- Low costs compared to dedicated ultrasound contrast media.
- Volume can be stored and analyzed later reducing examination time.
- Images are similar to HSG and pictures and volumes can be evaluated by other clinicians.
References


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).

**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.

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