Didactic: Best Practices and Innovative Approaches in the Surgical Management of Endometriosis-Associated Pain

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This course is designed to present an update on the best practices for the surgical management of endometriosis-associated pain, from early stage superficial disease to end-stage deep endometriosis. This course will focus on when and how to treat endometriosis at both ends of the surgical spectrum: atypical or subtle endometriosis in the adolescent, to deep endometriosis with an obliterated cul-de-sac or in difficult to reach surgical areas. In each setting, best surgical practice, adhesion prevention and nerve-sparing techniques will be addressed as relevant. Participants will be well positioned to offer their patients best practices and innovative approaches to the surgical management of endometriosis-associated pain when subtle and not obvious and in the most difficult of surgical situations.

Learning Objectives: At the conclusion of this course, the clinician will be able to:

1) Discuss the indications for surgery in adolescents, and when deep endometriosis is suspected;
2) recognize the various atypical forms of endometriosis in adolescents;
3) describe a systematic and reproducible approach to an obliterated cul-de-sac and deep endometriosis and to its reporting, and
4) discuss an approach to the excision of endometriosis in difficult areas, including thoracic and sciatic nerve endometriosis.

Course Outline

12:30 Welcome, Introductions and Course Overview
P.P. Yeung

12:35 Adolescent Endometriosis – When and How Operative and Atypical Manifestations of Endometriosis
P.P. Yeung

1:00 The Role of LUNA and PSN in the Surgical Management of Endometriosis-Associated Pain
A.M. Lam

1:25 A Systematic Approach to an Obliterated Cul-de-Sac
P.P. Yeung

1:50 Laparoscopic Nerve-Sparing Surgery for Bowel Endometriosis and Frozen Pelvis
A.C. Balica

2:15 Questions & Answers
All Faculty

2:25 Break

2:40 Tips and Tricks for the Surgical Treatment of Severe Endometriosis
M.S. Abrao

3:05 Laparoscopic Repair and Detection of GI and GU Injuries
A.M. Lam

3:30 Surgical Management of Thoracic Endometriosis
K.R. Sinervo

3:55 Nerve-Sparing Excision of Endometriosis, including Sciatic Nerve
N. Lemos

4:20 Questions & Answers
All Faculty

4:30 Adjourn
PLANNER DISCLOSURE
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Other: Investigator Initiated Research Funding: Laborie Inc., Medtronic
Kenny R. Sinervo*
Patrick P. Yeung*
Content Reviewer has no relationships.

Asterisk (*) denotes no financial relationships to disclose.
Definitions

• **CHRONIC PELVIC PAIN**

  6 months of chronic pelvic pain (defined as average pain intensity > 5/10 for more than 50% of that time)

  Pain must be predominantly localized to the pelvic region, bounded by the umbilicus superiorly, and the inguinal ligament and symphysis pubis inferiorly

Differences in presentation to adults

• More commonly chronic pain, pain outside of periods.

• Significant rate of Mullerian anomalies

• Often co-morbid conditions, such as interstitial cystitis, myofascial pain

Incidence & Prevalence

• UK systematic review concluded prevalence of dysmenorrhoea between 45 to 97%

• Review of primary dysmenorrhoea in adolescents found 20 to 90% prevalence - 15% severe

Zondervan 1988, Davis 2001

Disclosure

I have no financial relationships to disclose.
Social Burden

- The rate of absenteeism from school or work has been reported at between 10 to 45.6%

Johnson 1988; Sundell 1998

Delay in diagnosis of endometriosis

Length of time between onset of pain symptoms and the surgical diagnosis of endometriosis was 11.73 +/- 9.05 yrs in the USA

Hadfield, Hum Reprod 1996

Etiology - issues with Sampson..

- Endometriosis found before menarche, and after menopause
- Extrapelvic endometriosis
- Recurrence should be high after surgery

Yeung

Myofascial pain

Yeung
Myofascial pain - “evil triplet”?

Medical Conference 2012 - Maurice Chung, RPh, MD

On pudendal neuralgia patients with chronic pelvic pain 88.5 percent of those patients have pudendal neuralgia. Chung, EFA 2012

Physical exam

Look for myofascial pain (abdominal wall test) and vaginismus
Size and mobility of uterus and adnexa
Evidence of deep disease or DIE - uterosacral ligaments, RV disease

• OVERALL main goal of exam for endometriosis is to rule out evidence of deep disease, or look for myofascial disease

Yeung

Transvaginal ultrasound

Look for myofascial pain (abdominal wall test) and vaginismus
Size and mobility of uterus and adnexa
Evidence of deep disease or DIE - uterosacral ligaments, RV disease

• OVERALL main goal of US for endometriosis is to rule out evidence of deep disease

Yeung

EMPIRIC THERAPY for pelvic pain

FRANK W. LING, MD, FOR THE PELVIC PAIN STUDY GROUP

• 100 women aged 18-45 years old
• CPP and clinically suspected endometriosis
• Randomized to depot-Lupron vs placebo

• Mean decreases in pain sig for Lupron grp P<0.001
• Equal rates of endometriosis (78% vs 87%)

Ling, Obstet Gynecol 1999

EMPIRIC THERAPY for pelvic pain

Does Response to Hormonal Therapy Predict Presence or Absence of Endometriosis?

Teddi R. Jenkins, MD, C. Y. Liu, MD, and John White, DPM, MS

From the Division of Reproductive Endocrinology, Obstetrics, Gynecology and Infertility, Johns Hopkins and Johns Hopkins School of Public Health, Baltimore, Maryland (TMW, TRL, JW); and School of Public Health, Johns Hopkins University, Baltimore, Maryland (TMW, TRL, JW)

• Histologically-identified endometriosis was found:

<table>
<thead>
<tr>
<th></th>
<th>Responders</th>
<th>Non-responders</th>
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<tbody>
<tr>
<td></td>
<td>31/46 (67%)</td>
<td>39/57 (68%)</td>
</tr>
<tr>
<td>p</td>
<td>0.91</td>
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</table>

Jenkins, Liu, JMIG 2008

ACOG Practice Bulletin 114, 2010

Response to empiric treatment with GnRHa is neither diagnostic of nor predictive of the presence or absence of endometriosis (Ling 1999)
Diagnosis of endometriosis

The diagnosis of endometriosis can only be made by histology of lesions removed at surgery.


Near-contact laparoscopy

Does ‘invisible’ endometriosis exist?

ENDOMETRIOSIS

Deep retraction pockets

Endometriosis in adolescents is a hidden, progressive and severe disease that deserves attention, not just compassion

I. Brosens1, S. Gerits1, and G. Benagiano1

1. Institute for Fertility and Endocrinology, Leuven, Belgium; 2. Department of Gynecology, Obstetrics and Urology, Sapienza University, Rome, Italy.

Brosens, Hum Reprod 2013
**ENDOMETRIOSIS**

**CONCLUSIONS**

Questioning patients about their adolescent history can identify markers associated with deep infiltrating endometriosis. History of OC pill use history and adolescent history can be markers for more advanced endometriosis.

Chapron F&S, 2011

---

**Relationship between delay of surgical diagnosis and severity of disease in patients with symptomatic deep infiltrating endometriosis**

Matsuzaki Fertil Steril, 2006

---

**What is the recurrence rate?**

Other published rates found 40-60% in 1-2 years after ablation.

Sutton 1994
Winkel 2003

...even if postoperative hormonal suppression used.

Doyle 2009

---

**Cosmetic preferences**

Yeung, JSL S 2013

---

**Good cosmetic result**

Yeung

---

**Complete laparoscopic excision of endometriosis in teenagers: is postoperative hormonal suppression necessary?**

Yeung
What does it look like after excision?

Often takes a team, multidisciplinary approach ...

... to get a patient to lasting relief!

THANK YOU!!
The Role of LUNA and Presacral Neurectomy in the Surgical Management of Endometriosis-Associated Pain

Alan Lam
Associate Professor, Sydney Medical School, Royal North Shore Hospital
Director, Centre for Advanced Reproductive Endosurgery (CARE)
Board, World Endometriosis Society (WES)
Past President, Australian Gynaecological Endoscopy& Surgery Society (AGES)

Disclosure
I have no financial relationships to disclose.

Objective
• Discuss the definition of pain in relation to endometriosis

Endometriosis
• Oestrogen-dependent inflammatory disease
• Characterized by lesions of endometrial-like tissue outside of the uterus
• Occurs after onset of menarche
• Generally becomes inactive with menopause, unless a woman uses post-menopausal hormone therapy
• Is associated with pelvic pain and infertility


Epidemiology of Endometriosis

* 5-10%
* 50-60%
* 30-50%


**Definition of Pain**

- Pain: an unpleasant sensory and emotional experience associated with actual or potential tissue damage, or described in terms of such damage.
- Acute: pain that resolves quickly.
- Chronic: pain that continues beyond the expected healing time (6 months’ duration).
- Malignant Pain: a persistent form of pain often associated with cancer.
- Neuropathic Pain: pain caused by damage or disease affecting the somatosensory nervous system.
- Psychogenic Pain: pain where physical examination is normal or not appropriate.
- Functional Pain: pain in which a disease is not found.

**Spectrum of symptoms of endometriosis**

- Bowel symptoms:
  - Abdominal bloating
  - Painful bowel movements during menstruation
  - Nausea
  - Cyclical diarrhea or constipation
  - IBS

- Abdominal bleeding:
  - Menorrhagia
  - Premenstrual spotting

- Infertility
  - Endometriosis - 10% of women presenting with infertility
  - Unsuccessful IVF - endometriosis may be an underlying reason

- Systemic symptoms:
  - Chronic fatigue, lethargy
  - Fibromyalgia
  - Premenstrual tension
  - Depression

**Epidemiological evidence**

**For**
- 30 to 90% amongst women undergoing laparoscopy for evaluation of chronic pelvic pain compared to 5% of those who do not have infertility or CPP.
- Surgical treatment of endometriosis is associated with significant improvement in CPP.

**Against**
- the relationship between pain and endometriosis is not clear as endometriotic lesions have been detected in up to 43% of asymptomatic women.
- Pain associated with endometriosis varies from person to person and may encompass a variable and fluctuating constellation of dysmenorrhoea, dyspareunia and non-menstrual chronic abdominal and pelvic pain.
- The association between endometriosis stage and severity of pelvic symptoms is marginal and inconsistent.

**How does endometriosis cause pain?**

**Mechanisms**

- Direct - effects of cyclical active bleeding from endometriotic implants
- Indirect - effects from production of:
  - Cytokines
  - Nerve growth factors
  - Monocyte chemotactic protein (MCP-1)
  - Tumor necrosis factors (TNF)
  - Interleukins (IL-1, IL-6 and -8)
  - Nerve growth factor (NGF)
  - Prostaglandins E2 and F6 by endometriotic, mast cells, activated macrophages

**Chronic pelvic pain and endometriosis: translational evidence of the relationship and implications**

- **Part 1:** Sensory (blue) and sympathetic nerve fibers (green) group axon branches (red dashed lines) from nerve fibers that innervate nearby blood vessels to innervate a deeply infiltrating lesion on the left uterosacral. Sensory fibers that sprouted new axons become sensitized.
- **Part 2:** Sensitized peripheral nerve fibers, in turn, sensitize spinal lateral segment neurons - "central sensitization" (red asterisks).
- **Part 3:** Branches of the fibers extend to other segments (blue dashed lines). They can in turn sensitize neurons in the other segments - depicted by red dashed branches into the lumbar, thoracic and cervical spinal cord dorsal horn and the red asterisks at the levels.

**Chronic pelvic pain and endometriosis: translational evidence of the relationship and implications**

- **Part 4:** Multiple intersegmental spinal connections can modify how neurons in remote segments process nociceptive and non-nociceptive sensory information ("remote central sensitisation") (red asterisks) leading to increased nociception not only at sacral entry segments but also in any other segment.
- **Part 5:** Multiple connections exist that ascend from every level of the spinal cord to the brain (shown by blue lines) and descend from the brain to the spinal cord (shown by green lines) to affect activity throughout the nervous system, altering normal processing of nociceptive and non-nociceptive information (red asterisks: - medial cortex, lateral prefrontal, frontal, parietal lobes, temporal lobes) — providing mechanisms for different types of endometriosis-associated co-morbid pain, not only in the pelvis, but also elsewhere.
The pelvic viscera are innervated by both parasympathetic and sympathetic nerves that lie in the retroperitoneal space.

They reach the pelvic organs via the superior hypogastric plexus which divides into the hypogastric nerves (two nerve trunks without ganglia) that connect with the inferior hypogastric plexus.

Superior hypogastric plexus

- also known as Presacral nerve
- lies within the connective tissues of the retroperitoneal space ventrally to the aorta and its bifurcation, the middle sacral vessels, left common iliac vein in front of the fifth lumbar vertebra and between the common iliac arteries.
- It consists of sympathetic fibres from the abdominal aortic plexus, bilateral lumbar splanchic nerves, and parasympathetic fibres from the inferior hypogastric plexus, and affrent sensory nerve fibres from the pelvic viscera.
- To the right of the SHP lies the right ureter and common iliac vein and artery, to the left the sigmoid mesentry, inferior mesenteric vessels and the left ureter.

Laparoscopic uterine nerve ablation for treatment of chronic pelvic pain

- In 1955 Doyle described a technique of vaginal transection of the uterine nerves, apparently effective for dysmenorrhea
- Uterine nerve ablation involves the transection of the uterosacral ligaments close to their insertion into the cervix
- The procedure interrupts pelvic afferent sensory nerve fibres of the Frankenhaeuser nerve plexus


Evans S: Surgery CSG. A combined approach to pelvic heavy periods: laparoscopic laser uterine nerve ablation and endometrial resection.

Data collection and analysis

- Five trials investigated laparoscopic uterine nerve ablation (LUNA), two trials laparoscopic presacral neurectomy (LPSN) and two open presacral neurectomy (PSN).

Main results

- For the treatment of primary dysmenorrhea there was some evidence of the effectiveness of laparoscopic uterine nerve ablation (LUNA) when compared to a control or no treatment.
- The comparison between LUNA and laparoscopic presacral neurectomy (LPSN) for primary dysmenorrhea showed no significant difference in pain relief in the short term; however, long-term LPSN was shown to be significantly more effective than LUNA.
- For the treatment of primary dysmenorrhea, LUNA combined with surgical treatment of endometrial implants versus surgical treatment of endometriosis only showed that the addition of LUNA did not aid pain relief.
- For PSN combined with endometriosis treatment versus endometriosis treatment alone there was an overall difference in pain relief although the data suggests this may be specific to laparoscopy and for midline abdominal pain only.

Authors’ conclusions

- There is insufficient evidence to recommend the use of nerve interruption in the management of dysmenorrhea, regardless of cause.
- Future methodologically sound and sufficiently powered RCTs should be undertaken.

Presacral neurectomy (PSN)

- first described by Jaboulay in France and Ruggi in Italy in 1899
- The aim is to identify and remove all nerve bundles including the sensory nerve fibres innervating the pelvic viscera of the superior hypogastric plexus down to the peristeum
- reserved for women with intractable central pelvic pain and dysmenorrhea

Surgical Technique

Effectiveness of presacral neurectomy in women with severe dysmenorrhea caused by endometriosis who were treated with laparoscopic conservative surgery: a 1-year prospective randomized double-blind controlled trial

Presacral nerve preservation during surgery for severe dysmenorrhea caused by endometriosis.
Summary

- Chronic pelvic pain is a common presenting symptom of endometriosis.

- The mechanisms responsible for endometriosis-associated pain are complex and may vary from time to time and from person to person.

- Laparoscopic treatment of endometriosis by excision or ablation has been shown to be effective for relief of endometriosis-associated pain, albeit that there is a gradual cumulative risk of recurrence.

- For the treatment of primary dysmenorrhoea there was some evidence of the effectiveness of laparoscopic uterine nerve ablation (LUNA) when compared to a control or no treatment.

- There is high-quality evidence demonstrating additional benefits of presacral neurectomy for relief of chronic, intractable central pelvic pain in carefully selected cases after careful consideration of benefits, surgical risks and risk of pelvic organ dysfunction.

References

4. Menexes M. Classification of chronic pain by the International Association for the Study of Pain, 1996.

Evaluation question

In the management of women with chronic period and pelvic pain, which of the following is the most appropriate advice?

1. There is sufficient high-quality evidence to recommend the use of nerve interruption in the management of dysmenorrhoea, regardless of cause.
2. Laparoscopic treatment of endometriosis combined with presacral neurectomy may offer better relief of midline abdominal pain than treatment of endometriosis alone.
3. Laparoscopic uterine nerve ablation is preferred to presacral neurectomy due to better, longer lasting relief of mid-line dysmenorrhoea.
4. The best guarantee of long-term pain relief is excision of all endometriotic implants and potential future lesions by complete peritonectomy.
5. Be prepared for long-term self-catheterisation following presacral neurectomy.
A Systematic Approach to an Obliterated Cul-de-Sac
Patrick Yeung Jr., MD, FACOG
Associate Professor
Director, Center for Endometriosis
Minimally Invasive Gynecologic Surgery
Saint Louis University

DISCLOSURES
I have no financial relationships to disclose.

Tip of the iceberg

Obliterated cul-de-sac

Ureterolysis

Hypogastric artery ligation
Lateral to medial approach...

Pouch of Douglas - Puntambaker

Approach to an obliterated CDS

Ureterolysis - “GYN zipper”

Pararectal fossa - “Gen Surg zipper”

Presacral space - always disease free
Review of the neuroanatomy

Obturator fossa approach

Presacral space approach

View from both sides

Internal vessels and nerves

Putting it all together...

GYN “zipper”

GS “zipper”
Nerve-sparing approach to CDS

Opening of CDS and shaving

Frozen pelvis

Discoid resection using circular stapler

Is surgery for DIE (even with bowel resection) worthwhile?
Is surgery for DIE (even with bowel resection) worthwhile?

CONCLUSIONS:
The removal of deep disease markedly reduces dysmenorrhea and increases time to recurrent symptoms. Improves pain-free interval for dysmenorrhea, dyspareunia, and dyschezia.

Removal of deep disease with bowel resection results in improvement of all aspects of pain and quality of life. Conservative therapy of deep disease successfully maintains fertility potential.

Hidaka, Min Invas Ther 2012
Vercellini, AJOG 2006
Lyons, JMI&G 2006

THANK YOU!!

www.endometriosis-excision.com
Tips and Tricks for the Surgical Treatment of Severe Endometriosis

2016

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Disclosure

I have no financial relationships to disclose.

Tips and Tricks for the Surgical Treatment of Severe Endometriosis

1. Disease knowledge
2. Anatomic knowledge
3. The importance of the clinical exam - Pain x Infertility
4. Imaging: crucial step
5. Endometriomas
6. Deep endometriosis: Retrocervical and Paracervical
7. Deep endometriosis: Urinary tract
8. Bowel endometriosis

Learning Objectives

1) Explain endometriosis related to pain and infertility;
2) define the best way to treat endometriosis patients with pain and infertility;
3) apply new minimally invasive approaches to treating Endometriosis and infertility;
4) assess the current state of the indication of surgery or IVF

Tips and Tricks for the Surgical Treatment of Severe Endometriosis

1. Disease knowledge

• Deeply infiltrating endometriosis

• Depth of lesion >5mm

Deeply infiltrating endometriosis is related to more intense clinical complaints (pelvic pain)


Koninckx PR, Martin D. Fertil Steril 58:942, 1992

INfiltrative Endometriosis

Type 1: SUPERFICIAL
2. Anatomic knowledge

Landmarks

Ureter
Vessels
Inervation

ENDOMETRIOSIS: pain x most severe disease site
819 cases

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Peritoneal</th>
<th>Ovarian</th>
<th>Deep</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Severe Dysmenorrhea</td>
<td>22(51.8%)</td>
<td>126(48.5%)</td>
<td>229(62.9%)</td>
<td>0.005</td>
</tr>
<tr>
<td>Chronic pain</td>
<td>96(50.3%)</td>
<td>143(64.8%)</td>
<td>233(63.3%)</td>
<td>0.006</td>
</tr>
<tr>
<td>Infertility</td>
<td>56(28.7%)</td>
<td>66(25.2%)</td>
<td>124(34.1%)</td>
<td>0.03</td>
</tr>
<tr>
<td>Cyclic Dyschezia</td>
<td>21(11.4%)</td>
<td>33(13%)</td>
<td>120(33.5%)</td>
<td>&lt;0.001</td>
</tr>
<tr>
<td>Cyclic Dysuria</td>
<td>27(14.1%)</td>
<td>34(13%)</td>
<td>56(15.3%)</td>
<td>0.71</td>
</tr>
<tr>
<td>Dyspareunia</td>
<td>97(51.6%)</td>
<td>138(52.8%)</td>
<td>227(63.4%)</td>
<td>0.007</td>
</tr>
</tbody>
</table>

Bellelis, P; Abrao, MS et al. - RAMB 2010
ENDOMETRIOSIS: SYMPTOMS

<table>
<thead>
<tr>
<th>Pain</th>
<th>Pain + Infertility</th>
<th>Infertility</th>
<th>Without Symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Deep Endo (n=249)</td>
<td>54%</td>
<td>42%</td>
<td>4%</td>
</tr>
<tr>
<td>Endometriosis (n=705)</td>
<td>37%</td>
<td>47%</td>
<td>16%</td>
</tr>
</tbody>
</table>

Abrao, MS et al. 2008

Tips and Tricks for the Surgical Treatment of Severe Endometriosis

4. Imaging: crucial step

Transvaginal US x MRI for Deep Endometriosis

<table>
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<tr>
<th>Local</th>
<th>Method</th>
<th>Sensitivity</th>
<th>Specificity</th>
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<tbody>
<tr>
<td>Rectum Endo</td>
<td>MRI</td>
<td>83.3%</td>
<td>97.8%</td>
</tr>
<tr>
<td>TVUS</td>
<td>98.1%</td>
<td>100%</td>
<td></td>
</tr>
<tr>
<td>Clinical Exam</td>
<td>72.3%</td>
<td>54%</td>
<td></td>
</tr>
<tr>
<td>TVUS</td>
<td>95.1%</td>
<td>96.4%</td>
<td></td>
</tr>
<tr>
<td>Retrocervical Endo</td>
<td>MRI</td>
<td>76%</td>
<td>68%</td>
</tr>
<tr>
<td>TVUS</td>
<td>68.3%</td>
<td>46%</td>
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Deep Endometriosis

Transvaginal Ultrasound with bowel preparation

5. Endometriomas: therapeutic Options

Preoperative work-up for patients with deeply infiltrating endometriosis: transvaginal ultrasonography must definitely be the first-line imaging examination.


Preoperative work-up for patients with deeply infiltrating endometriosis: transvaginal ultrasonography must definitely be the first-line imaging examination.

Piketty M, Chopin N, Dousset B, Millischer-Bellaische AE, Roseau G, Leconte M, Borghese B, Chapron C.

Department of Gynecology, Obstetrics I and Reproductive Medicine, Université Paris Descartes, Paris, France.

Abstract

BACKGROUND:

Transvaginal ultrasonography (TVUS) has important advantages compared with transrectal ultrasonography (TRUS): it is less invasive, is cost-effective, is a familiar and well-accepted approach, and anesthesia is not required. We compared the accuracy of TVUS and TRUS for diagnosing rectal wall involvement in patients presenting with histologically proved deeply infiltrating endometriosis (DIE).

METHODS:

Prospective study of 134 patients with histologically proved DIE underwent preoperative investigations using both TVUS and TRUS. The radiologist (TVUS) and sonographer (TRUS) were unaware of the clinical findings but knew that DIE was suspected.

RESULTS:

DIE was confirmed histologically for all the patients. A rectal wall involvement was histologically proved for 75 patients (56%). For the diagnosis of infiltration of the intestinal wall, TVUS and TRUS, respectively, had a sensitivity of 90.7% and 96.0%, a specificity of 96.5% and 100.0%, a positive predictive value of 97.1% and 100.0% and a negative predictive value of 88.9% and 95.2%.

CONCLUSIONS:

TVUS and TRUS have similar degrees of accuracy for predicting intestinal involvement. TVUS must be the first-line imaging process to perform for patients presenting with clinically suspected DIE. The question for the coming years is to define if it is necessary to perform both systematically in cases of clinically suspected DIE.
Ovarian Cystectomy: Ovarian Tissue adjacent to the cyst wall

Endometriomas 58.7%
Other benign cysts: 5.4%
(p < 0.001)

Endometriomas reduce the ovarian response without surgery?

Prospective
46 patients with Unilateral Endometrioma >3cm
go surgery
IVF / HOC

<table>
<thead>
<tr>
<th></th>
<th>Normal Ovary</th>
<th>Ovary with endometrioma without surgery</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of follicles</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>p &lt; 0.01</td>
</tr>
<tr>
<td>Number of oocytes</td>
<td>4.5 (2.1)</td>
<td>3.2 (1.7)</td>
</tr>
<tr>
<td>retrieved</td>
<td></td>
<td>p &lt; 0.03</td>
</tr>
</tbody>
</table>

Somigliana, et al., The presence of ovarian endometriomas is associated with a reduced responsiveness to gonadotropins. Fertil Steril. 2006

6. Deep endometriosis: Retrocervical and Paracervical

Ureteral Endometriosis: Psoas Hitch

7. Deep endometriosis: Urinary tract

8. Deep endometriosis: Bowel Endometriosis

• One Lesion
• < 2cm
• < submucosa

Deep endometriosis infiltrating the recto-sigmoid: critical factors to consider before management
8: Deep endometriosis: Bowel Endometriosis: Segmental Resection

1. Rectum mobilization / identification of the left ureter.
2. Dissection of the mesosigmoid.
3. Dissection of the rectum and application of a linear stapler distally to the affected area.
4. Excision of any other lesions.
5. Enlargement of the right suprapubic incision (about 4 cm) in order to remove the surgical specimen.
6. Preparation of the proximal stump placing a purse-string suture and positioning the anvil of the circular stapler into the lumen.
7. Reinsertion of the colon into the abdominal cavity.
8. Closure of the abdominal incision.
9. Insertion of the circular stapler through the anus and finishing an end-to-end colorectal anastomosis.
10. Test of the anastomosis with air injection into the rectum with the pelvis filled with water in order to detect any leak.

Deep endometriosis: Bowel Endometriosis: Segmental Resection

Endometriosis and Infertility Therapeutic Options

- Which endometriosis?
- The preoperative diagnosis and the surgical decision
- Superficial Endo (ASRM I/II)
- Deep endometriosis
- Rationale

Severe Endometriosis Therapeutic Options

- Pain x Infertility
- Associated disorders
- Age, Ovarian Reserve
- Surgical Risk
- Economic aspects

References


Question

Patient with 28 years old, severe pelvic pain (dysmenorrhea, Deep dyspareunia and pain for defecation), nulliparous but don’t wanting to be pregnant now. Her exams showed signs of good ovarian reserve. She used GnRHa and combined oral contraceptives without improve of the symptoms. Transvaginal Ultrasound with bowel preparation for endometriosis revealed signs of retrocervical endometriosis and two lesions in the rectum (4 cm and 3 cm of longitudinal diameter, respectively), the lowest at 9 cm from the anal verge. She did a colonoscopy showing a reduction of the lumen of the rectum. Which treatment would you recommend?

Correct alternative: d
Laparoscopic Detection and Repair of Gastro-intestinal and Genito-urinary Tract Injuries

Alan Lam
Associated Professor
Centre for Advanced Reproductive Endosurgery (CARE)
Sydney Medical School, Australia

Disclosure
• I have no financial relationships to disclose.

Objectives
• Discuss the inherent risk and incidence of laparoscopy-associated gastrointestinal and genito-urinary tract injuries.
• Use the learning process to better understand the potential mechanisms of laparoscopy-associated gastrointestinal and genito-urinary tract injuries.
• Describe how to take appropriate measures to reduce the risks of gastrointestinal and genito-urinary tract injuries.
• Discuss the principles of management of gastrointestinal and genito-urinary tract injuries.

Intestinal injury

Incidence:
• 0.06 to 0.3% for diagnostic laparoscopy
• 0.3–0.5% in operative laparoscopy

Significance:
While relatively uncommon, intestinal injuries can result in serious complications including death with reported mortality rate from laparoscopy-induced bowel injury between 3 to 6%.

Mechanisms
• Entry-related
  • Veress needle and trocar
  • Secondary port
  • Open entry
• Operation-related
  • Trauma from surgery
  • Energy-related injuries from electro-surgery
  • Anastomotic leaks
  • Herniation through port sites

Gastro-intestinal injuries

Sites

Stomach 8%
Small bowel 58%
Large bowel 32%

Entry-related injury

Up to half of all laparoscopy-associated intestinal injuries may happen during the entry phase of laparoscopy.


Adhesiolysis

- Previous abdominal surgery puts risk of adhesion formation at 60-93%.
- Conversion rates range from 6.7% to 43%.
- Incidence of intraoperative enterotomy ranges from 3% to 19%.


Thermal bowel injury

Thermal injuries may occur during surgery due to the use of electro-surgery

1. Direct effect
2. Capacitive coupling
3. Insulation failure.


Port site hernia

Herniation through laparoscopic port sites is uncommon, with a reported incidence of 0.05-1%

- 3.1% risk associated with 12 mm ports compared to 0.3% with 5 mm ports.
- Bowel herniation through 5 mm ports has also been reported.


Measures to detect and allow intra-operative repair of gastro-intestinal injuries

1. Routine inspection of bowels after entry
2. In patients with suspected midline intra-abdominal adhesions, use alternative sites and consider direct visual entry
3. Limit adhesiolysis to the 'essential' only
4. Check instruments for insulation failure
5. Use atraumatic forceps when manipulating bowels


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4. Check instruments for insulation failure
5. Use atraumatic forceps when manipulating bowels
6. Observe bowels during insertion, removal and reinsertion of instruments
7. Use sharp scissors for adhesiolysis
8. Minimize thermal energy when working close to bowel wall
9. Routine rectal leakage test to check for leak or thinning
10. Closure of all trocar sites ≥10 mm


Intra-operative recognition and management

- Examine the bowels during and after surgery to rule out injury.
- If the underlying muscular and mucosal layers remain intact, small areas of "denuded" serosa need not be repaired.
- Repair perforations immediately to limit contamination of the peritoneal cavity.
- This can be done laparoscopically or by exteriorising the injured loop through a mini-laparotomy.

Factors which determine the detection and repair of gastro-intestinal injuries

- The timing of the diagnosis
  - 30-50% of intestinal injuries are not recognised during the initial laparotomy.
  - The examiner may prevent any time from 3 to 20 days after surgery.
  - Small bowel injuries normally present at 4-5 days (range 2–14).
  - Colon injuries 5.4 days (range 1–26).

- The patient’s clinical status
  - On the day the diagnosis, the higher the morbidity and mortality associated with injury.

- The level of expertise
  - Must be expert help.

Management of patient with suspected intestinal injuries in the postoperative period

- Prompt admission for assessment, intravenous rehydration, parenteral antibiotic and insertion of a nasogastric tube.
- Imaging studies and blood tests should not be used solely to guide clinical decision making as they are not always conclusive.
- Abdominal X-rays, ultrasound examination, computed tomography (CT) with contrast of the abdomen and pelvis may reveal air under the diaphragm, distended bowel loops with multiple fluid levels.
- Early involvement of other specialists, such as a colorectal surgeon, intensive care specialist, anaesthesiologist, and clinical microbiologist, is advisable.
- Have a low threshold for a second-look laparoscopy or laparotomy if the patient’s condition is unclear.
- Thorough peritoneal lavage and close inspection of the bowel to identify the site of injury.
- The damaged segment of bowel must be excised with closure of the defect with or without diversion (ileoectomy or Hartmann’s procedure).

Genito-urinary tract injuries

- Prompt admission for assessment, intravenous rehydration, parenteral antibiotic and insertion of a nasogastric tube.
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Delayed clinical presentation of intestinal injuries

- Variable and subtle symptoms:
  - Mild abdominal distension.
  - Mild pain or guarding at the incision site.
  - Low grade fever.
  - Diaphoresis with normal bowel sounds.
  - Mild hypoa.

- Respiratory distress may be mistaken for:
  - Chel infection.
  - Pulmonary embolism.

- Once peritonitis becomes generalised, patient’s condition may deteriorate quickly.
  - Sub-diaphragmatic abscess.
  - Septic shock.
  - Multi-organ failure.
  - Death.

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Overview

Incidence
- 0.05% to 5.3% of all laparoscopies
- Bladder injuries: 0.2–2.3%
- Ureteric injuries: 0.5–3%

While injuries to the bladder are easily recognised, injuries to the ureters are frequently missed during surgery.

Delayed diagnosis of urinary tract injury is associated with serious morbidity such as fistula formation, peritonitis, loss of renal function and is a frequent cause of medicolegal litigation.

Risk factors to Bladder injuries

Risk factors to Bladder injuries

Reduced exposure or visibility
- Large pelvic masses
- Obesity
- Pelvic haemorrhage
- Malignt disease
- Inadequate insight, retension and/or lighting

Anatomical distortions
- Adhesions
- Previous pelvic surgery
- Congenital anomalies
- Endometriosis
- Malignt infiltration
- Radiation therapy
- Chronic IGV

Diagnosis of bladder injuries

Signs of bladder injuries during surgery
- Partial trauma = mucosal bulge through the muscularis layer
- Complete injury
- Urethral loss through the bladder wall
- Gas distention of the urinary drainage bag
- Instillation of methylene blue dye via an indwelling urinary catheter confirm dye leaks through the defect
- Cystoscopy helps evaluate the extent of bladder trauma in relation to the ureteric orifices.

Suspected signs of bladder injury following surgery:
- Haematoma
- Dilatation
- Elevation of urinary urea nitrogen/creatinine ratio
- Lower abdominal pain and distension
- Ileus
- Urinary ascites
- Intra-abdominal abscess
- Peritonitis/sepsis
- Fistula.

Repair of bladder injuries

- Watertight repair laparoscopically, robotically or through a mini-laparotomy with 3-0 absorbable sutures in one or two layers provided:
  - Clean injury
  - Adequate expertise
  - Adequate time and exposure
  - Urinary or bladder wall not compromised.
  - An indwelling urinary catheter should be placed for 7–10 days.

Why is injury to the urinary tract is an inherent risk of pelvic surgery?

- The ureter traverses the pelvic cavity from the pelvic brim to the bladder
- It lies in the retroperitoneal space
- It is similar in appearance to blood vessels
- Its course can be distorted by pathologies, past surgeries, irradiation
- Congenital anomalies are unexpected

The pelvic segment of the ureter

- The pelvic segment of the ureter is ~15 cm long and accounts for roughly half of its total length.
- At the pelvic inlet, it crosses the common iliac vessels near its bifurcation.
- It then runs forward, accompanied by the neurovascular bundle of the bladder towards the anterior vaginal fornix before entering the bladder.


Pre-operative prediction of ureteric injury risk

- Conditions which increase risk to the ureter:
  - Malignancy
  - Endometriosis
  - Pelvic adhesions
  - Enlarged uterus
  - Cervical and broad ligament fibroids
  - Intra-operative haemorrhage
  - Congenital anomalies

- The majority of patients with ureteral injuries have no identifiable predisposing risk factors.

Most common sites of ureteric injuries

1. At the pelvic brim next to the infundibulo-pelvic ligament.
2. At the pelvic sidewall near the ovarian fossa.
3. At the ureteric tunnel as ureter travels under uterine artery.
4. Lateral to uterosacral ligament.
5. At the antero-lateral vaginal fornix near the insertion into the trigone.

Mechanisms of ureteral injuries

- Laceration
- Ischemia
- Blunting
- Intra
- Reaction
- Obstruction
- Infection
- Enlarged Cervical
do not significantly leak. The majority of operative procedures are performed through a transperitoneal approach. The risk of retroperitoneal haemorrhage or leakage through a defect of the peritoneal wall is reduced by the use of prophylactic stents. If leakage does occur, it is usually detected by retrograde pyelography. Prophylactic stents can be inserted through a percutaneous approach or via the bladder. If leakage occurs, stenting should be continued for at least 1 week. The role of prophylactic management of ureteric injuries

- Immediate repair with the help of a urologist.
- Via laparoscopy, laparoscopic or robotic surgery.
- If the injury is ligated or clamped, remove the offending ligature immediately and assess the blood loss and colour change.
- If a retrograde pyelogram is performed, identify the defect and the extent of injury.
- Partial transection can be repaired by insertion of a double-J ureteral stent with or without suturing over the stent. The stent should be left in situ for 6 weeks.
- If the injury is greater than 5 cm from the bladder, consider re-anastomosis by uretero-ureterostomy.

Intraoperative management of ureteric injuries

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Managment of intra-operatively diagnosed ureteric injuries

- Where there is a loss of ureteric length, a psoas hitch or Boari flap may be considered to ensure a tension-free anastomosis.

If the ureter is completely transected with no loss of ureteric length and the site of the injury is ≤ 5 cm from vesicoureteric junction

- re-insertion of the ureter directly into the bladder is usually performed,
- preferably with tunnelling of the ureter through the bladder muscularis to avoid ureteric reflux, and recurrent urinary tract infections.


Diagnosis of delayed ureteric injuries

- Variable symptoms:
  - loin pain, hematuria, oliguria,
  - urinary incontinence in cases of ureterovaginal fistulas,
  - hypertension from obstructive nephropathy,
  - fever, peritonitis or sepsis.

- Transient rising serum creatinine
- Imaging (Ultrasonography, DPT and CT with intravenous contrast - Hydronephrosis or hydronephrosis: retroperitoneal or intraperitoneal free fluid which due to urinary leakage.
- Cystoscopic visualization of ureteric jets into the bladder can be falsely reassuring in case of incomplete or delayed injuries.
- Retrograde ureterogram involving injection of contrast up into the ureters via a cystoscope can be used to diagnose more subtle ureteric injuries not evident on VEP or CT studies.

EVALUATION QUESTION

The best way to prevent injury to the ureter is by:

a) Routine placement of ureteral stent at the start of all major open or laparoscopic pelvic surgery

b) Utilising lighted ureteral stents
c) Routinely identify its path through the pelvis and the regions where it is most susceptible to injury
d) Complete avoidance of electro-surgery
e) Routine use of preoperative IVP before hysterectomy
Thoracic and Diaphragmatic Endometriosis

Ken Sinervo, M.D., M.Sc., F.R.C.S.C.
Director, Center for Endometriosis Care

Disclosure

I have no financial relationships to disclose.

Objective

Discuss the management of thoracic and diaphragmatic endometriosis.

Thoracic Endo

- Thoracic Endo is very, very uncommon
- Probably makes up less than 1/10 of 1% of endometriosis patients
- Usually presents with chest pain, SOB, catamenial pneumothorax, or catamenial hemoptysis; less commonly hemothorax or nodules

Thoracic Endometriosis

- Catamenial Pneumothorax is most common presentation (75% of cases)
- Spontaneous or recurrent pneumothorax within 72 hours of onset of menses

Etiology of Catamenial Pneumothorax

- Fenestrations of the diaphragm allow air to enter the abdomen via the vagina and fallopian tubes during menses, when no cervical mucus
- Sloughing of endometrial implants on the pleura
- Elevated levels of prostaglandins from endo implants, causing vascular and bronchoalveolar vasoconstriction with subsequent ischemic injury, alveolar damage and air leakage
Catamenial Hemothorax
- About 15% of cases present with catamenial hemothorax
- Usually present with pleural effusion and acute onset of dyspnea
- Hemothorax and on VATS, pleural implants or diaphragmatic defects

Catamenial Hemoptysis
- Accounts for about 7% of thoracic endo
- Can be quite voluminous
- Usually not associated with chest pain
- On bronchoscopy, usually detect hemosiderin laden macrophages
- Mechanism may be due to micro-embolization (Kim et al. 2010, Respiration, 79(4);296-301) had 16 of 19 patients undergoing recent obstetric or gynec procedures

Pulmonary Nodules
- Account for 6% of thoracic endo
- May be asymptomatic and confused for malignancy or result in hemoptysis since the nodules invade into the bronchials
- Older patients (38-39 average compared to 34-35 with other forms)

Diaphragmatic Endo
- May present in a few forms:
  - Catamenial or chronic chest pain or scapular pain, SOB, or upper quadrant pain
  - Less commonly can have catamenial pneumothorax

Diaphragmatic Endo
- Usually occurring 95% of the time on the right hemidiaphragm
- 4% on the left and 1% on both
- May occur in as many as 1% of patients with endometriosis
- Usually have more significant pelvic disease
- Youngest patient that we have treated was 16 y.o.

Diagnosis
- High index of suspicion is important to consider thoracic and diaphragmatic endo
- Rule out Gall Bladder disease with ultrasound and HIDA scan
- If catamenial nature, CT scan of chest may demonstrate nodules, pneumothorax, hemothorax or thickening of the diaphragm; rarely may present with herniating liver through diaphragm
Treatment Plan

- Attempt medical treatment – continuous OC’s, Lupron® – failure of either does not confirm that it is not endo – 85% of those who fail medical treatment are found to have endo at laparoscopy (Jenkins et al (2008), JMIG, Jan-Feb 15(1): 82-86); recurrence high – 50% within 6 months of stopping meds
- Asymptomatic patients who are found to have endo on the diaphragm – recommend bx if possible – 20% will progress to symptomatic (Redwine)
- During laparoscopy, consider 5 mm trocar under rib cage to visualize posterior diaphragm if high index of suspicion

Treatment

- Consider collaboration with Thoracic surgeon
- We perform CO2 laser excision on all pelvic and diaphragmatic endo that can be seen from below
- Then VATS with resection of any endo on the diaphragm – need CT of chest and PFT’s before surgery
- If catamenial pneumothorax, may consider adjuvant Lupron® therapy (have only had 1 recurrence of 30 without its use, but recommended in series of 100 patients, however, did not use excision of all diaphragmatic endo

Diaphragm Fenestrations

Treatment

- Rarely may require thoracotomy if very large lesions requiring mesh placement (Gore-Tex® or biomembranes)
Diaphragm and Thoracic Endo

- Requires a high index of suspicion to diagnose
- Usually associated with significant pelvic disease
- A number of clinical presentations
- If failed or unable to tolerate medical Rx, consider collaboration with VATS surgeon – must excise all disease to minimize recurrences
Nerve-Sparing Excision of Endometriosis

Discourse

Discuss nerve-sparing excision of endometriosis.

Objective

Lumbar Nerves

- Iliohypogastric N.
- Ilioinguinal N.
- Genitofemoralis N.
- Femoral N.
- Obturator N.

Sacral & Coccigeal Nerves

- Superior Gluteal N.
- Inferior Gluteal N.
- Post. Cutaneous Femoralis N.
- Sciatic N.
- Pelvic N.
- N. to the Levator Ani Mm.

Somatic Nerves of the Pelvis

www.neurodisfuncao.pelvica
**Sensitive Innervation**

- **L2/L3**: Hip flexors (iliopsoas)
- **L3**: Hip adductors
- **L3/L4**: Knee extensors (Quadriceps)
- **L5**: Ankle dorsiflexion, eversion and inversion + hip abductors
- **S1**: Ankle plantar flexion + hip extensors
- **S2-S4**: External anal and urethral sphincters

**Motoric Innervation**

- **L2/L3**: Hip flexors (iliopsoas)
- **L3**: Hip adductors
- **L3/L4**: Knee extensors (Quadriceps)
- **L5**: Ankle dorsiflexion, eversion and inversion + hip abductors
- **S1**: Ankle plantar flexion + hip extensors
- **S2-S4**: External anal and urethral sphincters

**Autonomic Nerves**

- **Hypogastric Nerves** (sympathetic)
- **Proprioception** (filling sensation)
- **Internal urethral and anal sphincters**
- **upp. Hypogastric Plexus** (derived from sympathetic trunk)

**Pelvic Splanchnic Nerves**

- **Detrusor contraction**
- **Colon descendens, sigmoid and rectum**
- **Nociception**

**Hypogastric Nerve**

- **Inf. Hypogastric Plexus**

**The Sacral Nerve Roots**

- **Nuccio Lemos**
- **www.neurodisfuncao.med.br**
Neurophysiology of the LUT

- Th10-L2 - Sympathetic
  - Internal Urethral Sphincter Contraction (α)
  - Detrusor Relaxation
- S2-S4 - Parasympathetic (M3)
  - Detrusor Contraction
  - Internal Urethral Sphincter Relaxation
- S2-S4 - Somatic Nervous System
  - Urethral Contraction
  - Levator Ani Muscle Contraction

Avoiding Nerve Lesion on Radical Gynecological Surgery

The LANN Technique to Reduce Postoperative Functional Morbidity in Laparoscopic Radical Pelvic Surgery

The bladder 1 year later. In all other patients, neither postoperative suprapubic catheter nor bladder training was mandatory, so our percentage of chronic bladder anony was 0.61%. Any kind of early or late fistula or additional

Hypogastric Nerve

- Loss of bladder proprioception
- Stress Urinary Incontinence

Results

Table: The prevalence of initial retention was 4.6% (n=10)

<table>
<thead>
<tr>
<th>Late bladder and rectal nerve dysfunction</th>
<th>Constipation after 30 days</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urinary retention after 30 days</td>
<td>Constipation after 30 days</td>
</tr>
<tr>
<td>0 (0.0%)</td>
<td>1 (1.1%)</td>
</tr>
<tr>
<td>13 (13.7%)</td>
<td>4 (4.5%)</td>
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<td>0.04</td>
<td>NS</td>
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Hypogastric Nerve

Autonomic Nerves

Hypogastric Nerve (sympathetic) - proprioception (filling sensation), internal urethral and anal sphincters

Hypogastric Plexus (derived from sympathetic trunk)

Pelvic Splanchnic Nerves (nervi erigenti) - Detrusor contraction - Colon descendens, sigmoid and rectum

Nociception

Inf. Hypogastric Plexus

Never dissect the pararectal fossae bilaterally without priorly exposing the sacral nerve roots and the pelvic splanchnic nerves.

Preventing Post-Operative Bladder/Rectal Hypo/Atonia

- In case of bilateral disease, leave some endometriosis behind
- Expose sacral nerve roots
- Calculate damage to the nerves

- Always use HD camera and intraoperative neurostimulation when dissecting the pelvic splanchnic nerves.
Preventing Post-Operative Bladder/Rectal Hypo/Atonia

Synromic Diagnosis

Peripheral neuropathy is a clinical condition on a single nerve or nerve root, which may be caused by mechanical, degenerative or auto-immune injuries. Its symptoms include pain, tingling, numbness, and muscle weakness on the affected nerve’s dermatome.

Symptoms
- Gluteal/Flaccid/Cover Girdle Pain/Adductor
- Vaginal/Rectal Foreign Body Sensation
- Refractory Urinary Urgency
- Dischezia
- Proctalgia
- Vesical/Rectal Tenesmus

Signs

Intrapelvic Neuropathies

neurondisfunção pélvica
Urodynamic Study

Functiona MRI (Tractography)

Endometriosis

Fibrosis

Treatment ALWAYS Starts by Detrapment!!!!

Results

- Cure: ±30%
- Improvement*: ±50%
- Unchanged: ±15%
- Worsened: ±5%

*≥50% reduction in Visceral Cause Of Pelvic Pain.

Ref.: Treatment of Endometriosis Involving the Sacral Nerve Roots. Int Urogynecol J. 2016

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Adjuvant Therapies

- Pharmacotherapy
  - Anticonvulsants
    - Gabapentinoids
      - Gabapentin
      - Pregabalin
  - Antidepressants
    - Carbamazepine
  - Opioids
    - Tramadol
      - Oxicodone
      - Codeine
      - Hypnosis/physical therapy
      - TENS
      - Ultrasound
      - Myofascial release
      - Postural re-education
      - Acupuncture/Electroacupuncture

- Intervention Pain Therapies
  - Blocks (bupivacaine + corticosteroids)
  - Radio-frequency
  - Surgical Neuromodulation

LION Procedure

INDICATIONS
- Neuropathic Pain
- Phantom pain
- Post-herniorrhaphy inguinal pain
- Chronic Pelvic Pain
- Perineal Pain
- Ciaatica
- Post-decompression pain
- Anal Incontinence
- Detrusor Overactivity
- Rehabilitation

In Conclusion...

- Signs suggestive of pelvic nerve involvement:
  - Perineal pain or pain irradiating to the lower limbs, or motoric deficit on the lower limbs in the absence of a spinal disorder
  - LUTS in the absence of prolapse or bladder lesion
  - Tenesmus and/or dischezia associated with perineal and/or gluteal pain
  - Rectal or vaginal foreign body sensation

- Identification of the pelvic splanchic is only possible by dissecting the sacral nerve roots.

The hypogastric nerves are often mistaken for the uterosacral ligament.

The lesion to these nerves may cause pain, motoric deficit, proprioception and neurogenic stress urinary incontinence.
In Conclusion...

It is not possible to dissect the pelvic splanchnic nerves out of endometriosis. Calculated damage!

In Conclusion...

Sometimes, the wisest decision is to leave some disease behind.

Thank You!
nucelio@gmail.com
www.neurodisfuncao.med.br
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.

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).