Didactic:

No Pain, No Gain

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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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Chronic pelvic pain is estimated to affect 15-20% of women, is the primary indication for 10% of outpatient gynecology visits, 40% of diagnostic laparoscopies, and is the second most common indication for hysterectomy. Despite its high prevalence, the evaluation and management of pelvic pain patient often presents many challenges to the practicing gynecologist. As with many other chronic pain conditions, pain severity does not always correlate with pelvic pathology and standard medical and surgical therapies are not always effective. This course is designed to provide participants with a practical approach to the chronic pelvic pain patient that includes the clinical evaluation, appropriate diagnostic workup and options for medical versus surgical management. This course will review the role of surgery in the diagnosis and treatment of pelvic pain, when to perform surgery, when surgery is not likely to be helpful, and will offer alternative options when standard medical and surgical therapies fail. Course faculty will utilize clinical vignettes and video demonstrations to enhance the interactive experience between faculty and audience.

Learning Objectives: At the conclusion of this course, the clinician will be able to: 1) Discuss the physiology and neurobiology of acute versus chronic pain; 2) formulate a comprehensive differential diagnosis, including a detailed musculoskeletal exam; 3) describe the appropriate diagnostic evaluation of endometriosis, interstitial cystitis, and irritable bowel syndrome; 4) describe the indications and techniques of surgical and office-based procedures used to treat chronic pelvic pain; 5) discuss the efficacy and predictors of persistent pain following hysterectomy and/or oophorectomy; and 6) describe medical and behavioral therapies for pelvic pain that is refractory to usual therapies.

Course Outline

12:30 Welcome, Introductions and Course Overview  
M.K. Chung

12:35 Chronic Pelvic Pain: Is It All in Her Head? What Every Gynecologist Should Know about the Biology of Chronic Pain  
S. As-Sanie

1:00 A Systematic Approach to the Initial Evaluation of Chronic Pelvic Pain  
E.T. Carey

1:25 Endometriosis, Pelvic Adhesive Disease and CPP: When to Perform Surgery, What Works and What Doesn’t  
I.K. Orbuch

1:50 Don’t Forget about Other Visceral Pain Syndromes, the “Evil Twins” of Endometriosis  
M.K. Chung

2:15 Questions & Answers  
All Faculty

2:30 Break

2:40 Expand Your Toolbox to Tackle Chronic Pain: Nerve Blocks, Trigger Points, and Botox Injections  
N.A. Desai

3:05 Is Hysterectomy the Definitive Therapy for Chronic Pelvic Pain?  
S. As-Sanie

3:30 Pudendal Neuralgia, Pelvic Congestion, and Other Controversies in Pelvic Pain: What Is the Evidence?  
N.A. Desai

3:55 Medical Therapies for Chronic Pain: Look Up and Think Outside the Pelvis  
E.T. Carey

4:20 Questions & Answers  
All Faculty

4:30 Adjourn
PLANNER DISCLOSURE
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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Asterisk (*) denotes no financial relationships to disclose.
Is chronic pelvic pain all in her head?
What every gynecologist should know about the biology of chronic pain

AAGL 43rd Annual Congress on Minimally Invasive Gynecology
Vancouver 2014
PELV-609: No pain, No Gain

Suzie As-Sanie, MD, MPH
Department of Obstetrics and Gynecology
Director of Minimally Invasive Surgery & Fellowship
Director of the Endometriosis Center
The University of Michigan

Disclosures
- I have no financial relationships to disclose

Endometriosis & Chronic Pelvic Pain

Who has pelvic pain?
- Pain-free
- 5 days/month, 3/10 pain
- 20 days/month, 8/10 pain

Why is CPP so frustrating?
- CPP Patient
- CPP Practitioner

Objectives
1. Review the biology of pain perception
2. Define 3 mechanisms that lead to chronic pain
3. Present evidence that endometriosis and other chronic pelvic pain disorders may be central pain disorders
Mechanistic Classification of Pain

**PAIN**

**NOCICEPTIVE**

Responds to:  
- NSAIDs, opioids  
- injections & procedures

Examples:  
- Osteoarthritis  
- Cancer  
- Postoperative pain

Peripheral inflammation or mechanical damage of somatic or visceral structures

---

**NEUROPATHIC**

Damage or entrapment of peripheral nerves

---

**PERIPHERAL**

- peripheral (NSAIDs, opioids, Na channel blockers) pharmacological therapy  
- central (TCA’s, neuroactive compounds) pharmacological therapy

Examples:  
- Herpes zoster  
- diabetic neuropathy  
- ilioinguinal neuropathy

---

**CENTRAL**

Central disturbance in pain processing with no ongoing peripheral stimulation

---

**ACUTE PAIN**

**CHRONIC PAIN**

Chronic pain is not prolonged acute pain

**Acute Pain**

- Symptom of injury or disease  
- Well defined, recent onset  
- Expected to end with removal of peripheral injury  
- Essential biological warning function

**Chronic Pain**

- Onset often insidious and not clearly associated with specific injury  
- Unpredictable duration  
- Often progressive  
- Pain out of proportion to peripheral pathology  
- No apparent biological function

---
Supraspinal Influences on Sensory Processing = Volume Control

**Facilitation**
- Substance P
- Glutamate and EAA
- Serotonin (5HT2a, 3a)
- Neurotensin
- Nerve growth factor
- CCK

**Inhibition**
- Descending anti-nociceptive pathways
  - Noradrenaline – serotonin
  - Opioids
  - GABA
  - Cannabinoids
  - Adenosine

Pain Sensitivity Varies across the General Population

- Like most other physiological processes, we (animals) have a “volume control” setting for how our brain and spinal cord processes pain and other sensory information (Mogil PNAS 1999)
- This is likely set by the genes that we are born with, and modified by neurohormonal factors and neural plasticity

Central amplification of pain processing can lead to chronic pain in the absence of peripheral pathology

- Multifocal pain (suggest use pain diagram)
- Endorse “neuropathic” verbal descriptors of pain
- Higher current and lifetime history of pain
- Multiple somatic symptoms (fatigue, memory difficulties, sleep disturbance)
- Greater sensitivity to multiple sensory stimuli (sound, light)
- High rates of co-morbidities with other related syndromes

Shared features of non-nociceptive or “central” pain syndromes

- 1.5 – 2X more common in females
- Strong familial/genetic underpinnings
- Triggered or exacerbated by “stressors”
- Pain and/or sensory amplification most reproducible pathophysiological feature

Most chronic pain conditions are “mixed pain” conditions

Peripheral  |  Centralized
---|---
Acute pain  |  Fibromyalgia
Osteoarthritis  |  Tension Headache
Rheumatoid Arthritis  |  TMJ
Low back pain  |  IBS
Endometriosis  |  Interstitial Cystitis
Vulvodynia  |  |
Evolution from Chronic Pain “Prone” to Chronic Pain

“Central” Pain Prone Phenotype

- Female
- Early life trauma
- Genetics
- Family history of chronic pain and/or mood disturbances
- Personal history of chronic centrally-mediated symptoms
  - multifocal pain with neuropathic descriptors, fatigue, sleep disturbances, psychological distress, memory difficulties
- Maladaptive Cognitions such as catastrophizing
- Lower mechanical pain threshold and descending analgesic activity

Exposure to “stressors” or acute, peripheral nociceptive input

Psychological and behavioral response to pain or stressor

New or different region of chronic pain

Mechanistic Classification of Pain

PAIN

NOCICEPTIVE

NEUROPATHIC

PERIPHERAL

CENTRAL

Peripheral inflammation or mechanical damage
Damage or entrapment of peripheral nerves
Central disturbance in pain processing

You must care, otherwise your might do more harm than good…

There is growing evidence that many women with CPP also have a central pain problem

Pathophysiology of Endometriosis

Surgical destruction of endometriosis is effective therapy for many women with CPP

- Sutton et al. 1994
  - Study design
    - RCT, double blinded
    - N=63 ⅔ stage I-III endometriosis
    - Laparoscopic laser ablation + LUNA vs. expectant management
  - Results
    - Significant improvement with laser ablation at 6 months
      - 63% vs. 23% improved, p<0.01

Pelvic pathology does not fully explain CPP

1. Little, if any, correlation between severity of pain and degree of pelvic pathology, inflammatory markers.
2. Medical and surgical therapies are not effective for many patients.
3. Medical therapies are non-specific & effectively treat other causes of CPP.
4. GnRH agonists are effective therapy for cyclic-IBS and CPP without endometriosis.
5. Frequency of recurrent pain is high following medical and surgical therapies.
   Pain recurs often in the absence of recurrent endometriotic disease.
   Hysterectomy/BSO is not curative for all patients, with 5–10% report persistent or recurrent pelvic pain.

Other chronic pain conditions are more common in women with CPP & endometriosis

<table>
<thead>
<tr>
<th>Condition</th>
<th>General population</th>
<th>CPP</th>
<th>Endometriosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>IBS</td>
<td>10-20%</td>
<td>36-48%</td>
<td>32%</td>
</tr>
<tr>
<td>Interstitial cystitis</td>
<td>0.6-12%</td>
<td>11-38%</td>
<td>33-89%</td>
</tr>
<tr>
<td>Fibromyalgia</td>
<td>2-4%</td>
<td>?</td>
<td>5.9%</td>
</tr>
<tr>
<td>Chronic Fatigue</td>
<td>1%</td>
<td>?</td>
<td>4.6%</td>
</tr>
</tbody>
</table>

Increased Pressure Pain Sensitivity in Women With Chronic Pelvic Pain

Women with CPP are more pain sensitive at non-pelvic sites compared to pain-free controls.

These findings are independent of the presence or severity of endometriosis.

Decreased Regional Gray Matter Volume in Women with CPP

- @Endo @Pain vs. age-matched controls (n=17,17)
  - B cingulate gyrus
  - R putamen
  - R posterior insula
  - L thalamus

- @Endo @Pain vs. age-matched controls (n=6,12)
  - L thalamus

Increased Regional Gray Matter Volume in Women with @Endo @Pain

- @Endo @Pain vs. age-matched controls (n=15,14)
  - R Periaqueductal Gray

Changes in regional gray matter volume in women with chronic pelvic pain: a voxel-based morphometry study

Chung MK et al. JOEL. 2006;19:35-38.
Persistent and Recurrent Pain Will Be Common

Fig. 2 Cumulative 36-month probability recurrence of moderate or severe dysmenorrhea, as assessed by a linear analogue scale in 180 symptomatic women with endometriosis who had laparoscopic surgery with (solid line) or without (dashed line) uterosacral ligament resection.


Proposed diagnostic approach to CPP*

- Endometriosis
- Adenomyosis
- Adhesions
- Chronic PID
- Uterine fibroids
- Pelvic congestion
- Ovarian remnant
- Residual ovarian syndrome
- Vaginal apex pain
- Interstitial Cystitis
- Urethral syndrome
- Chronic UTI
- Bladder stones
- IBS
- Functional Bowel disorders
- Chronic appendicitis
- Inflammatory bowel disease
- Migraines
- Diabetic neuropathy
- Hypothyroidism
- Chronic or complex regional pain
- Pelvic pain syndrome

Gynecologic Urologic Gastrointestinal Musculoskeletal CNS

- Pelvic floor myalgia
- Tmj, fascia, bone pain
- Fibromyalgia
- Fatigue, chronic fatigue, burnout
- Disc disease
- Spinal stenosis
- Diabetic peripheral neuropathy

Comorbid pain conditions: Fibromyalgia, chronic fatigue syndrome, TMD, migraines, etc.

Comorbid psychological disease: Depression, anxiety, etc.

Cognitive and psychosocial traits: Coping, personality, maladaptive behavior

Diagnostic pearls

- Chronic pelvic pain is generally multifactorial, often with multiple organ systems involved
- Expand differential diagnosis to include GI, GU, musculoskeletal, and central nervous system causes of pain

CPP is NOT one disease

- Peripheral pain disorder + Endometriosis + CPP
- Central pain disorder + Endometriosis + CPP
- (No treatment needed) + Endometriosis - CPP

Expand your tool belt!
Treatment pearls

- Begin with “gold-standard” therapies for contributing factors
  - Ex. Hormonal suppression for cyclic pain or chronic pain with cyclic exacerbation
  - Ex. Physical therapy for abdominal wall and pelvic floor myofascial pain
  - Ex. Laparoscopy for excision/ablation of endometriosis
- When standard treatments fail, then reconsider the diagnosis, re-evaluate comorbid psychosocial variables

Abnormalities in pain processing are a common mechanism in many chronic pain disorders (IBS, IC, fibromyalgia, etc.)
- It is likely to be an underlying mechanism in at least some women with CPP
- Consider adding centrally-acting medication when standard “gynecology” treatments fail
  - Antidepressants for pain
  - Antiepileptics for pain
- Consider using centrally-acting medication as part of first-line therapy

References

A Systematic Approach to the Evaluation of Chronic Pelvic Pain

Erin Teeter Carey, MD, MSCR
University of Kansas Medical Center
Center for Pelvic Pain and Sexual Health

Disclosure

I have no financial relationships to disclose.

Objectives

- At the conclusion of this activity, the participant will be able to:
  - Review the definition of chronic pelvic pain (CPP)
  - Review pertinent history and physical exam findings in relation to the etiology of the pain
  - Review the process of the evaluation and management of chronic pelvic pain
  - Understand the psychosocial issues associated with chronic pelvic pain

Definition

- Pain in the low back, abdomen or pelvis > 6 month duration
- Cyclic/Noncyclic
  - ACOG definition: “Noncyclic pain of 6 or more months’ duration that localizes to the anatomic pelvis, anterior abdominal wall at or below the umbilicus, the lumbosacral back, or the buttocks and is of sufficient severity to cause functional disability or lead to medical care.
  - + Dysmenorrhea
  - + Dyspareunia

2005 Consensus Guidelines

Society of Obstetricians and Gynecologists of Canada (SOGC)

American Journal of Obstetrics and Gynecology 2003
Chronic pelvic pain

How to filter out the CAUSE of the pain?

• Both the provider and the patient desire a single etiology of the chronic pain
• Instead it is often a pain matrix

Endometriosis pain

• Endometriosis → Pain

General Considerations

• Don’t expect one diagnosis or etiology
• Evaluate the pain itself as a diagnosis
  • Consider the potential of several organic contributors
  • Assess the person with chronic pain
  • Unique exposure history
  • Factors in the individual’s biopsychosocial situation

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• Instead it is often a pain matrix

Endometriosis pain

• Endometriosis → Pain
That would be too easy…

- Endometriosis

No brain, no pain

Normal sensation

Central sensitization

Clinical evaluation of a chronic pelvic pain patient

- Time consuming
  - Prior physician notes, operative reports, hospitalizations
  - Redirection may be required
    - Gather your necessary history items first
      - PMH, PSH, FH, etc.
    - Then allow the patient to speak and feel ‘heard’
    - Account for the affective component of pain
    - Bill for time
Clinical presentation

- 32 year old female P3 female presents as a referral from her local OBGYN. She has a long history of chronic pelvic pain and has had multiple laparoscopic surgeries for endometriosis in the past, each providing 2-3 months of relief. Finally, after ‘years of pain’ (and failing medical therapy for endometriosis), she had a total laparoscopic hysterectomy, bilateral salpingo-oophorectomy in 2011.
- On review of the operative report, the abdomen and pelvis were normal, without evidence of endometriosis.
- VSS. BMI 21.

Clinical presentation

- Despite her procedure she soon began experiencing pain again. She describes her pain and ‘in my ovaries’ in the bilateral lower quadrants. It is constant, crampy with occasional sharp pains that shoot into her vagina. She rates it a 12/10 at its worst.
- She is sexually active with her husband but has pain with deep penetration. She states ‘it is as though he is hitting a brick wall with deep thrusting.
- She also complains of urinary frequency and vaginal pain with a full bladder. Moderate dyschezia with the passage of bulky stools. Alternates between constipation and diarrhea. Occasional mucus.
- She sleeps poorly, with difficulty falling and staying asleep. She reports four consecutive hours of sleep each night and does not feel rested upon awakening.
- SH: Married, Homemaker. Former smoker (10 pack year history). Rare EtOH. No illicit drug use. She is in a safe relationship.
- FH: Mother with endometriosis.

Clinical presentation

- PMH:
  - Migraines
  - Anxiety
- PSH:
  - Laparoscopic cholecystectomy
  - Laparoscopic appendectomy
  - Laparoscopic EOE x 3
  - Laparoscopic TLH/BSO
- Review of systems
  - Grossly positive (*SCAN patient’s positive ROS)

Clinical presentation

- ROS

History

- Pain characteristics ("OPQRST-ASPN" mnemonic):
  - Onset
  - Provocation/Palliation
  - Quality
  - Region/Radiation
  - Severity
  - Time
  - Associated Symptoms
    - Gastrointestinal
    - Genitourinary
  - Pertinent Negatives

History

- Pain history
  - When did it start?
    - Acutely or insidiously
  - Rate of increase
    - Rapid mood deterioration may be a signal of the patient’s affective resilience, coping skills, support systems
  - Anchor to menarche or coitarche?
    - Sometimes patients report a much shorter duration
  - “You said it’s been present for the last nine months but you had a laparoscopy for endometriosis 3 years ago. Was there anything going on more recently that marks the recent increase?”
### History

- **Pain history**
  - Descriptors: what does it feel like?
    - Pulling, searing, stabbing, like “my pelvis is going to fall out,” cramping, burning, bloating, “pins and needles,” electric
  - Intensity
  - Cyclic? Daily? Any pain free days?
  - Triggers
    - Food, activity, intercourse, stress
  - Time of day

- **Previous treatments tried**
  - Which were helpful?
  - Full therapeutic trial (duration and dosage)?
  - If benefited from surgery, how long was the benefit?

- **Specific organ systems**
  - Bowel
    - Consistency more important than frequency
  - Dyschezia
  - Bladder
    - Urinary frequency (for some, just partially filled bladder provokes pain)
    - Pressure that becomes more painful over time if bladder not emptied
    - Nocturia
  - PPUF Questionnaire (easy to use, semi but not specific)
  - Jaw pain, headaches, low back pain

- **Past medical history**
- **Past surgical history**
  - Post-surgical new onset
  - Length of relief in relation to previous treatments/surgeries
- **Family history**
- **Social history (personal history of abuse, h/o drug or opioid abuse/misuse?)**
- **Psychiatric history (mood disorders, anxiety/depression)**
- **Sleep disorders**
- **Sexual history**

### Questionnaires

- FSFI
- PUFF
Clinical presentation

- Alleviating factors: Percocet 5-10 mg po q 6 hours, heat, rest
- Aggravating factors: Exercise, intercourse, prolonged sitting/standing
- Treatments tried: OCPs, Lupron, surgery, muscle relaxants, narcotics

Current medications:
- Percocet 5/325mg 1-2 tabs q 6 hours (using 8/day). Prescribed by her PCP. She was only given enough to make it to your appointment.
- Zoloft 100 mg po daily
- Topamax 100 mg po daily
- Flexeril 10 mg po tid pm muscle spasm
- Xanax 0.5 mg po tid pm anxiety

Allergies
- Ibuprofen
- Tramadol
- ASA
- Morphine

Physical examination

- General: Well appearing, well nourished female in NAD. She appears slightly anxious. Normal gait. Able to toe walk and heel walk without difficulty.
- Back: Nontender spinous processes, paraspinous muscles, facet joints, PSIS, SI joints
- Photo or video

Abdomen:
- Take a moment to observe (position, incisional scars, laxity)
- Sometimes helpful to examine supine and standing
- If you suspect neuropathy, start with q-tip exam
- Ask the patient to point to the area which is most bothersome and evaluate other areas first
- Have the patient palpate her most tender area

External genitalia: Normal. Qtip of the vulvar vestibule nontender, mild erythema
- Single digit exam: video to show levator ani, obturator and piriformis. Palpation of the urethra for urethritis, bladder neck and bladder.
- Start on the side without pain
Physical examination

- Bimanual exam
- Rectovaginal exam

Levator ani examination

Howard F et al, Chronic Pelvic Pain, 2000

Assessment

- Endometriosis
- Migraines
- Chronic pelvic pain
- Chronic pain syndrome
- Pelvic floor tension myalgias +/- trigger points
- Irritable bowel syndrome
- Possible interstitial cystitis

Assessment

- Even in the setting of multi-organ dysfunction, caution against multiple individual diagnoses in the beginning
  - This can lead to fragmented care amongst multiple providers
- Often treating the central component of pain first with
  - Lifestyle modifications
  - Centrally acting medications
  - Physical therapy
Management

- Lifestyle modifications
  - Sleep hygiene
    - If she is able to maximize both REM and non-REM sleep her pain perception may be lessened
  - 10 pm – 6 am
  - Dark cool room. No noise. No dogs. No TV in bedroom.
  - Exercise
    - Daily 45-60 minutes aerobic exercise
  - Diet
    - Minimize process foods and sugar
    - Low inflammatory diet
    - Endometriosis diet
    - Interstitial Cystitis diet
    - Paleo Diet

- Endometriosis
  - Hormonal management
    - OCPs
    - Progestins
    - Aromatase Inhibitors
  - Surgical management

- Depression
  - Discontinue Zoloft
  - Initiate a centrally acting agent (SNRI, TCA, gabapentanoids)
    - Cymbalta- titration
    - TCA- titration
    - Gabapentin-titration

- Pelvic floor tension myalgias
  - Pelvic floor physical therapy
  - Muscle relaxers
  - Vaginal valium

- Pain management
  - Wean off opioids
    - Often receptive if you review risk of opioid therapy and a plan for pain management
  - Written contract for weaning
  - If unable to wean, referral to a pain clinic
  - Consider increasing Topamax
  - Referral to a pain psychologist
    - Manage anxiety/depression
    - Cognitive behavioral therapy
    - Pain coping skills –catastrophization?
  - Encourage meditation/relaxation techniques
    - www.doyogawithme.com

- Pelvic floor physical therapy

- Muscle relaxers

- Vaginal valium

Conclusion

- Chronic pelvic pain is a prevalent condition that may represent central neurological changes in addition to peripheral tissue damage
- Chronic pelvic pain is a chronic, costly disease requiring a long-term, multidisciplinary approach to treatment
- Timely intervention and appropriate, multifactorial treatments may:
  - restore quality of life
  - lead to long-term effective management in absence of permanent cure

Conclusions

- Treatment requires careful evaluation of multiple organ systems
- Long-term efficacy of surgical management remains unclear
- Urgent need to develop diagnostic measures and treatments for central pain syndromes

References

Endometriosis, Pelvic Adhesive Disease and Chronic Pelvic Pain: When to Perform Surgery, What Works and What Doesn’t Work

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DISCLOSURE
Consultant: Intuitive Surgical

OBJECTIVE
• ENDOMETRIOSIS - When to Operate
• Why Surgical Biopsy is So Important
• Excision vs Ablation of Endometriosis - Which is best?
• Management of Endometriomas
• Post Op Hormone Suppression - To do or Not to do
• Lysis of Adhesions - To do or Not to do

S.F.
• S.F. is a 22 year old college student referred to my office by a pelvic floor physical therapist for evaluation of possible endometriosis. She has been diagnosed with Pelvic Floor Tension Myalgia and is undergoing pelvic floor physical therapy treatment. S.F. describes worsening dysmenorrhea and pain throughout the month which has caused her to drop out of college this semester. She describes a history of constipation since she was 10 years of age and was subsequently diagnosed with Irritable Bowel Syndrome (IBS) a few years ago. She was started on continuous oral contraceptives 6 months ago. She was started on continuous oral contraceptives & months ago with mild improvement. Upon questioning, she also reports urinary frequency up to 15 times per day along with frequent “urinary tract infections although she states “my urine cultures are always negative.”
• HOW WOULD YOU WORK UP HER PAIN?

M.P.
• M.P. is a 33 yr. old with biopsy confirmed endometriosis (s/p lapsky x 4 including TLHBSO and excision of endometriosis) presents to my office with complaints of pelvic pain, worse in LLQ, back pain and dyspareunia. Pain is described as 10/10 throughout the month. The patient has taken a 4 year leave of absence from work she loves as a photographer. In addition, she describes that she can’t sit in “hard chairs” for extended periods of time. Upon questioning she reports she urinates 22 times a day and describes nocturia 2-3 times a night.
• HOW WOULD YOU WORK UP HER PAIN?

HOW WOULD YOU WORK UP THESE PATIENTS?
• A. Thorough history and physical exam evaluating not only for endometriosis but also for additional pain generators
• B. Pelvic MRI
• C. Pelvic Ultrasound
• D. Sonohysterogram
• E. None of the Above
HOW WOULD YOU WORK UP THESE PATIENTS?

• A. Thorough history and physical exam evaluating not only for endometriosis but also for additional pain generators
• B. Pelvic MRI
• C. Pelvic Ultrasound
• D. Sonohysterogram
• E. None of the Above

HOW WOULD YOU WORK THESE PATIENTS UP?

• “Formulating a plan of care for patients with CPP is difficult because there are often multiple sources of their pain.” (Howard 2011)

PELVIC PAIN

• When taking a patients history with chronic pelvic pain it is critical to ask questions not only regarding pain but also urologic, GI, musculoskeletal and reproductive systems (Howard 2003)
• In a study from a large pelvic pain center, in women with endometriosis and pelvic pain, close to 80% of patients had an additional reason to have pain (Butrick 2009)

PELVIC PAIN

• Endometriosis
• Interstitial Cystitis
• Pelvic Floor Tension Myalgia
• Hernia
• Adhesions
• Pudendal Neuralgia
• Vulvodynia
• Irritable Bowel Syndrome

ENDOMETRIOSIS AND CO-EXISTING CONDITIONS

<table>
<thead>
<tr>
<th>Interstitial Cystitis</th>
<th>Pelvic Floor Dysfunction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Irritable Bowel Syndrome</td>
<td>Chronic Fatigue Syndrome</td>
</tr>
<tr>
<td>Vulvodynia</td>
<td>Allergies &amp; Sensitivities</td>
</tr>
<tr>
<td>Fibromyalgia</td>
<td>Lupus</td>
</tr>
<tr>
<td>Pudendal Neuralgia</td>
<td>Sjogren’s Syndrome</td>
</tr>
<tr>
<td>Celiac Disease</td>
<td>TMJ</td>
</tr>
</tbody>
</table>

ENDOMETRIOSIS

• Presence of Ectopic Endometrial Glands and Stroma
ENDOMETRIOSIS

- Found in 70-90% of women with chronic pelvic pain (Practice Committee ASRM 2008)
- Chronic inflammatory disorder affecting at least 10% of reproductive aged women (Ozkan 2008)
- Found in up to 50% of women with infertility (Missimer 2003)
- Definition: Presence of endometrial glands and stroma found outside the uterus
- Initial treatment described by Cullen in 1920 using scalpels and scissors (Cullen 1920)
- Only surgery enables a definitive diagnosis

PATHOGENESIS

- Multiple theories: much debate exists
  - Retrograde Menstruation
  - Iatrogenic
  - Lymphatic
  - Coelomic Metaplasia
  - Environmental
  - MULTIFACTORIAL

ENDOMETRIOSIS SYMPTOMS

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dysmenorrhea</td>
<td>Dyspareunia</td>
</tr>
<tr>
<td>Right or Left Sided Pain</td>
<td>Back Pain</td>
</tr>
<tr>
<td>Constipation or Diarrhea</td>
<td>Dyschezia</td>
</tr>
<tr>
<td>Pain Unrelated to Menses</td>
<td>Fatigue</td>
</tr>
</tbody>
</table>

PHYSICAL EXAM FOR ENDOMETRIOSIS

- Uterosacral ligament thickening
- Masses/fullness in the cul-de-sac on recto-vaginal exam
- Visible abnormalities of the cervix and vagina on speculum examination

ENDOMETRIOSIS

- Many variable appearances at laparoscopy
WHY WE NEED TO BIOPSY?

• BACKGROUND: There is a poor correlation between the clinical symptoms and the severity of the disease (Szendei 2005, Perpora 1999, ASRM 1996)
• Multiple studies show that visual recognition of lesions is insufficient
• 72.6% with visually diagnosed endometriosis had histologically proven disease (Chaperon 2011)
• Endometriosis at higher stages was diagnosed more accurately than minimal disease (Kanzagera 2008)

• Endometriosis was accurately diagnosed in only 49.7% of ASRM Stage I. Deep endometriosis was more likely to be diagnosed accurately than superficial endometriosis (Fernando 2013)
• Differences in appearance, depth and location of endometriotic lesions and interobserver variability are recognized factors that influence the accuracy of visual diagnosis (Stratton 2002, Nezhat 2008)
• Thus, it is important to biopsy suspected lesions

EXCISION VS ABLATION - BACKGROUND

• Medical therapy: Can produce significant side effects, including the contraceptive effect for women who wish to conceive
• Ablation: 1st described by Hasson in 1979
• In severe cases with Deep Infiltrating Endometriosis (DIE) involving bowel, bladder, and other organs, surgical excision is required to fully treat endometriosis and can often include bowel resection, bladder resection...etc. Ablation would be ineffective and dangerous when endometriosis involves organs

• Few randomized controlled studies that have directly compared ablation vs excision
• Limited data with small numbers until Yeung et al study in 2013 and Healy et al study in 2014

• Wright et al did not demonstrate any difference between excision vs ablation with coagulation of mild endometriosis
  - ASRM Stage I and II
  - Small sample size of only 24 patients
• Wright et al: “Ablative techniques have the potential disadvantages of leaving a greater area of necrotic tissue behind, with increased inflammatory action and a higher propensity to develop adhesive disease.” (Wright 2005)

• Excision of endometriosis showed a significant reduction in all pain scores except bowel symptoms as well as significant improvement in quality of life (Yeung 2013)
• Excision of Endometriosis showed a statistically significant improvement in Quality of Life Scores at multiple centers (Yeung 2013)
EXCISION VS ABLATION

• Healey et al (2014): Prospective randomized double blinded study (5 year follow up)
• Healey et al: Dyspareunia and abdominal pain scores showed a greater reduction at 5 years with excision than with ablation
• Healey et al: Further medical therapy for endometriosis was significantly more common (p=.004) by 5 years with the ablation group (31%) compared to the excision group (20%)

(Healey 2014)

WHEN SHOULD WE OPERATE?

• Royal College of Obstetricians and Gynaecologists “ablation of endometriotic lesions reduces endometriosis associated pain compared to diagnostic laparoscopy” and “endometriosis associated pain can be reduced by removing the entire lesions in severe and deeply infiltrating disease”
• Society of Obstetricians and Gynaecologists of Canada: Recommends surgery for pain associated with endometriosis should be reserved for those in whom medical treatment has failed
• National Institute for Health and Care Excellence (NICE) Guidelines(2013): Advocate for laparoscopic treatment of minimal and mild endometriosis and discourage medical therapy in minimal and mild endometriosis

BLUNT TIP SCISSORS

ROBOTIC SCISSORS

EXCISION ENDO VIDEO

ENDOMETRIOSIS

• After expert removal of endometriosis, recurrence rate of symptoms and endometriotic lesions varies from 10 to 55% within 12 months (Vercellini et al., 2009), with recurrence affecting ~10% of the remaining women each additional year (Guo 2009)
• The risk of needing a repeat surgery is higher in women younger than 30 years at the time of surgery (Shakiba 2008)
• First operations tend to produce a better response than subsequent surgical procedures, with pain improvements at 6 months in the region of 83% for first excisional procedures versus 53% for second procedures (Abbott 2004)
ENDOMETRIOMA

**RECURRENT-BACKGROUND**

- Ovulation plays a fundamental role in the pathogenesis of endometriomas.
- Ovarian endometriomas can develop from ovarian follicles and corpus luteum which are by-products of ovulation (Jain S 1999, Vercellini 2009).
- Inhibition of ovulation is protective.

**FIRST SURGERY IS MOST IMPORTANT. 2ND SURGERIES TO TREAT ENDOMETRIOSIS ARE RARELY EFFECTIVE** (Vercellini 2009).

**Medical treatment:**
- reduction in cyst size up to 57% (Farquhar and Sutton 1998)

**Surgery:**
- Most effective treatment (Farquhar and Sutton 1998)

**ENDOMETRIOMA**

- Drainage alone: **NOT RECOMMENDED** due to the high rate of recurrence of symptoms (Vercellini 1992, Donnez 1994).
- **EXCISION:** (described in the literature)
  - Open the endometrioma
  - Stripping away or excising the endometrioma from the underlying cortex using scissors and a grasping forceps.

**ENDOMETRIOMA- Cochrane Review 2014**

- 2 Randomized studies regarding the management of ovarian endometrioma via laparoscopic excision of the cyst endometrioma, size greater than 3cm, for the primary symptom of pain (Alborizi 2007, Beretta 1998).
- **Results:** DECREASED recurrence rate of dysmenorrhea, dyspareunia, and non-menstrual pelvic pain.
- Also resulted in a reduced recurrence rate of endometrioma and a reduced requirement for further surgery compared to surgery to ablate the endometrioma.

- “There is good evidence that excisional surgery for endometriomata provides a more favorable outcome than drainage and ablation with regard to the recurrence of the endometrioma, and recurrence of pain symptoms. Consequently this approach should be the favored surgical approach.” (Cochrane Collaboration 2014).
ENDOMETRIOMA RECURRENCE

- Vercellini et al 2012
  - “Postoperative oral contraceptive use dramatically decreased the risk of ovarian endometrioma recurrence”
  - “Long-term post operative OC protects not only from relapse of endometriotic lesions but also recurrence of post-operative pain syndromes.”
  - “The protective effect tends to vanish rapidly after discontinuation. Therefore, ovulation should be inhibited until contraception is (no longer) desired, which may mean years of contraception.”

ENDOMETRIOMA-RECURRENCE PREVENTION

- “The available literature strongly supports the benefits of prolonged administration of estroprogestins after surgery in preventing recurrence of endometriomas and dysmenorrhea.” (Somigliana, Vercellini 2014)
  - “Long-term hormone therapy should be recommended after surgery to treat endometriosis and should be used until the woman decides to conceive. Evidence strongly supports the benefits of this approach in preventing recurrence of dysmenorrhea and endometriomas. (Somigliana, Vercellini 2014)

ENDOMETRIOMA MEDICAL TREATMENT

- NSAIDS (Allen 2009)
- Paracetamol
- Combined OCPs (Davis 2007, Harada 2008, Guzick 2011, Vercellini 2011)
- Progestins (Crosignani 2006, Schlaff, 2006,
  - Norethindrone (Vercellini 2011, Brown 2012)
  - Dinogest (Cosson 2002)
  - Mirena IUD

ENDOMETRIOSIS and LUPRON

- Pain relief in response to Lupron was not significantly different in those who did or did not have detectable endometriosis at laparoscopy (81.8% vs 72.7%) (Walker, 1993; Dlugi 1990)
  - “Establishing the correct diagnosis by laparoscopy before initiating therapy with medication that is associated with significant short-term and long-term side effects is the preferred approach, although further studies are warranted.” (ASRM 2014)

ENDOMETRIOSIS

- Endo has features of an inflammatory process that stimulates a wide range of immune and inflammatory cells. These immune cells secrete immune modulators which can stimulate the sensation of pain. (Laparoscopic Surgery for endometriosis(Review), Cochrane Collaboration 2014)
- Endometriosis lesions contain high numbers of sensory and autonomic nerve fibers which provide a route for painful stimuli. (Laparoscopic Surgery for endometriosis(Review), Cochrane Collaboration, 2014)

MECHANISMS OF PAIN IN ENDOMETRIOSIS

- Production of growth factors and cytokines by activated macrophages and other cells in endometriotic implants (Riley, 1999 and Howard, 2009)
- Irritation of pelvic floor nerves or direct invasion of those nerves by infiltrating endometriotic implants, especially in the cul-de-sac (Howard, 2009 and Porpora 1999)
- Direct and indirect effects of active bleeding from endometriotic implants
ENDOMETRIOSIS PAIN

- NIH launched a Multidisciplinary Approach: the Study of Chronic Pelvic Pain Research Network
- Central sensitization - an increase in the excitability of the CNS so that normal inputs now evoke exaggerated responses (Woolf, 1983). Clinical evidence suggests this concept applies to painful endometriosis in women (Bajaj et al., 2003).
- Neurosensitization - once the body has sustained an injury it creates a cascade like effect of neurosensitization in nearby organs.
- Cross-talk - convergence of input from different organs on spinal cord neurons.

LAPAROSCOPIC ADHESIOLYSIS

- “The reported rates of chronic pain relief after laparoscopic adhesiolysis vary from 38% to 87%”
- “…Some suggest that pain relief is attributable to patient reassurance after laparoscopy has excluded serious morbidity, or because of a placebo effect based on a good doctor-patient relationship.” (Kolmorgen 1991, Hallfeldt 1995, Howard 1996, Bruxelle 1994)

ENDOMETRIOSIS & ADHESIONS

- Adhesions were most likely to form at the site of a former adhesion rather than an endometriosis lesion (36% vs 15%).
- Thicker adhesions were 88.9% more likely to reform than thinner adhesions.
- Endometriomas were significantly more likely to result in adhesion formation than lesions or adhesions not associated with the ovary. Small and large endometriomas had a similar high rate (100% vs 87%) of adhesion formation, despite interventions designed to reduce adhesions.
**BIBLIOGRAPHY**


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**VIDEO OF S.F.**

**VIDEO OF M.P.**
**BIBLIOGRAPHY**

- DiNino et al. Ovarian endometriosis: is the role of gonadotropin-releasing hormone agonists the same or different? Fertil Steril 1980;44:635-6.
Don’t Forget about Other Visceral Pain Syndromes, the “Evil Twins” of Endometriosis.

DISCLOSURE SLIDE

I have no financial relationships to disclose.

CPP Is a Significant and Common Disorder in Women

- Magnitude of CPP
  - >9 million women in the United States
  - 20% of women had pelvic pain >1 year in duration
- CPP accounts for
  - 16% of referrals for OB/Gyn visits
  - Over 40% of laparoscopies
  - 18% of hysterectomies
- Patients with CPP have significantly lower general health scores compared with patients without CPP
- CPP is associated with painful intercourse (dyspareunia)
- Majority of these patients have ENDOMETRIOSIS!!!!!!

Chronic Pain is Not The Same as Acute Pain.

Acute Pain
- Symptom of injury or disease
- Well defined onset, recent
- Expected to end in days or weeks
- Essential biologic warning function
- It may become Chronic

Chronic Pain
- Remote onset
- Unpredictable duration
- No apparent biologic function
- Progressive or persistent
- May be associated diseases that exacerbate or precipitate manifestations of chronic pain
- May have acute Flare

Gynecologic Approach to CPP
What do we usually do? How do we start our evaluation?

- To evaluate Pelvic Pain
- Check Infection, R/O PID. But it is Chronic, we made the patients to take an antibiotic anyway!
- UTI? Culture Negative! Contamination. Still treat!
- With Dysmenorrhea >> BCP, NSAID, Some GnRH, Depo Provera, etc. Is it Endometriosis? \( \rightarrow \) L'Scopy
- With Dyspareunia, Is it Endometriosis? \( \rightarrow \) L'Scopy
- With Menometrorraghia, adenomyosis? We don’t know unless you have tissue pathology. \( \rightarrow \) TLH
- With Ovarian Cysts and pain \( \rightarrow \) L’scopy

- LAPAROSCOPY almost always is the first step. BUT STOP HERE FIRST!!!

Chronic Pelvic Pain

- Endometriosis is the most common diagnosis that lead to multiple laparoscopic surgeries.
- Treatment has not been very successful!
- It also heavily depends on the skill of the surgeons.

Laparoscopic radical excision of Uterine Sacral Endometriosis

Appearance

Excisional Procedure

Surgery results

Endometriosis and Surgery: Results by Stage of Disease
**Surgery results**

<table>
<thead>
<tr>
<th>Procedure</th>
<th>12mo</th>
<th>18mo</th>
<th>24mo</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excision</td>
<td>96%</td>
<td>91%</td>
<td>60%</td>
</tr>
<tr>
<td>Ablation</td>
<td>69%</td>
<td>41%</td>
<td>23%</td>
</tr>
<tr>
<td>Excision + GnRH</td>
<td>96%</td>
<td>91%</td>
<td>70%</td>
</tr>
</tbody>
</table>

What do you do then, when Laparoscopic surgeries failed?

**Medical management**

- GnRH Agonist Relief of Symptoms in Endometriosis
- Year | Cumulative Recurrence
- 1  | 1%
- 2  | 28%
- 3  | 39%
- 4  | 58%
- 5  | 53%
- 6-7 | 56%
- Higher failure rate of Medical therapy in long term.

Ling et al, 1997

Still hurts, Now what?

- More Laparoscopy?
- Perform a Presacral Neurectomy?
This study was carried out to determine the efficacy of laparoscopic presacral neurectomy (LPSN) and to define its role in modern gynecology using a prospective consecutive cohort. One hundred three patients underwent LPSN, and 87 were included in this study. After LPSN, 91% of these 87 patients experienced some decrease in pelvic pain, and a majority of patients had 50% or greater reduction in pain score. There was a highly significant difference among the preoperative and postoperative pain levels (p less than 0.0001). Patients with pain of endometriosis, primary dysmenorrhea, and chronic pelvic inflammatory disease responded with a decrease in pain score to this procedure. Complications included 1 patient with intraoperative bleeding, 2 with postoperative vaginal dryness, and 1 with constipation.

We conclude that LPSN is as effective as that performed by laparotomy and should be offered to patients undergoing operative laparoscopy for central dysmenorrhea and pelvic pain. This procedure should be performed only by expert endoscopists experienced in the anatomy of this region.
CONCLUSION. The evidence for nerve interruption in the management of dysmenorrhea, regardless of cause. Future RCTs should be undertaken.


OBJECTIVES. To assess the effectiveness of surgical interruption of pelvic nerve pathways for primary and secondary dysmenorrhea. The main outcome measures were pain relief and adverse effects. Two reviewers extracted data on the characteristics of the study quality and the population, intervention, and outcomes independently.

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 differences in pain relief in the short term; however, long-term LPSN was shown to be significantly more effective than LUNA. For the treatment of secondary dysmenorrhea six identified RCTs addressed endometriosis and one included women with uterine myomas. The treatment of LUNA combined with surgical treatment of endometrial implants versus surgical treatment of endometriosis alone showed that the addition of LUNA did not aid pain relief.

For LUNA 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. Adverse events were significantly more common for endometriosis treatment alone, but were not significantly associated with the surgical procedures, the cure rate was evaluated in group A at a follow-up examination at 6 months (87.3% vs 60.3%) and 12 months (85.7% vs 57.1%). At follow-up visits, the frequency and severity of dysmenorrhea, dyspareunia, and chronic pelvic pain were also evaluated at the same time intervals.

CONCLUSION. Presacral neurectomy improves the cure rate in women who are treated with conservative laparoscopic surgery for severe dysmenorrhea caused by endometriosis.


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CONCLUSION. Presacral neurectomy improves the cure rate in women who are treated with conservative laparoscopic surgery for severe dysmenorrhea caused by endometriosis.
After Hysterectomy, still Hurts! What is next?

- Is it Residual Ovarian Syndrome, or Is it Ovarian Remnant?
- Would a Laparoscopic oophorectomies work? Or is it adhesion?
- Lets go ahead for Laparoscopic lysis of adhesions?

The presence of interstitial cystitis in patients with ovarian remnant syndrome or residual ovarian syndrome.

- The majority of 79 patients with the clinical diagnosis of residual ovary or ovarian remnant syndrome have either evidence of an uroepithelial defect (78% with a positive PST) or cystoscopic findings compatible with IC (91%).

Chung et al, SLS Las Vegas 2003, ASRM San Antonio 2003

PELVIC ADHESIONS

- Does adhesion cause pain?

Adhesion

- 105 patients with previous abdominal surgery
  - 52 patients have adhesion (49.5%)
  - 13 patients had lap. Entry difficulties (25%)
  - No injury
  - 27 patients have pain (51.9%)
  - 20 patients had a + PST (74%)
  - 7 patients had a negative PST (26%)
- IPPS abstract San Diego 2007

Chronic Pelvic Pain Is Characterized by Overlapping Disease Conditions

Interstitial Cystitis/PBS
Endometriosis
Adenomyosis
GI Disorders
IBS
Hernia
Pelvic Infection and Adhesions
Vulvodynia
Pudendal Neuralgia
Recurrent UTI
PTMS
The New Insight!

Don’t just focus on endometriosis, 
It is the Pelvis!

The Bladder Is the Source of CPP in 
Over 30% of Female Patients¹

Visceral Sources of Pelvic Pain²

- Reproductive causes are the source of CPP³  
in only 20% of patients¹

³ Parsons CL et al.  Female Patient. May 2002;(suppl):12-17

OB/Gyns Need to Consider 
Non-Gynecologic Causes of CPP

- CPP is a common 
condition in women 
of reproductive age 
- 38-85% of women 
presenting to a 
gynecologist for 
unresolved CPP 
may have IC

Interstitial Cystitis

Definition
- Interstitial cystitis is urgency, frequency, 
and pain in the absence of a defined etiology

- The triad of urinary urgency, frequency, and 
bladder or pelvic pain in the absence of 
bacterial infection or other definable 
pathology is the definition of interstitial cystitis
Prevalence of IC in Women Shows a Wide Range

<table>
<thead>
<tr>
<th>Studies</th>
<th>Prevalence Rate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Curhan et al, 19991</td>
<td>0.00052% to 0.00067% (52-67/100,000)</td>
</tr>
<tr>
<td>Stanford, 20012</td>
<td>2.5 million</td>
</tr>
<tr>
<td>Leppilahti et al, 20023</td>
<td>0.45% (450/100,000)</td>
</tr>
<tr>
<td>Parsons et al, 20024</td>
<td>1/4.5 (228 million)</td>
</tr>
</tbody>
</table>


Interstitial Cystitis

- Epidemiology*
  - Median age at diagnosis: 42 to 46 years
  - 9:1 female-to-male ratio
  - Patients see average of 8 physicians before diagnosis
  - Average time from development of symptoms to diagnosis is 5 to 7 years

Where Does IC Begin?

Increasing Severity of Symptoms

- Early
  - U&F
    - Occasional CPP UTIs
  - U&F
    - Mild CPP
- Severe
  - U&F
    - Moderate to Severe CPP
  - U&F
    - Severe Nonremitting CPP IC

IC Is Typically Diagnosed Late in Disease Continuum

- Average time between development of symptoms and diagnosis is 5 years
- See at least 5 physicians before diagnosis
- Significant suffering and reduced QOL
- May have unnecessary hysterectomy
- Diagnosis of IC 2-7 years

The Etiology of IC

- Bladder lumen
  - Epithelial Layer Damage
  - Mast cell activation and histamine release
  - Activation of C-fibers and release of substance P
  - Potassium leak into interstitium

The Normal Bladder

IC BLADDER

- Bladder lumen
  - Intracellular adhesion molecules
  - GAG layer/mucus
  - Epithelial cells
  - Extracellular matrix
The Role of Potassium in the Symptom of Interstitial Cystitis/ Painful Bladder Syndrome

Pathogenesis of PBS/IC: Defective Urothelial Barrier

PBS/IC Can Appear Concurrently With Endometriosis. THE EVIL TWINS!

Two Studies* Confirm the Overlap Between IC and Endometriosis1,2

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Study 1: Chung et al1 (n=60)</th>
<th>Study 2: Chung et al2 (n=178)</th>
</tr>
</thead>
<tbody>
<tr>
<td>IC/PBS</td>
<td>90%</td>
<td>89%</td>
</tr>
<tr>
<td>Endometriosis</td>
<td>80%</td>
<td>75%</td>
</tr>
<tr>
<td>Both</td>
<td>70%</td>
<td>65%</td>
</tr>
</tbody>
</table>

*In a separate study, Clemons et al determined that 38% of women scheduled to undergo laparoscopy for CPP had IC.

Consider the bladder as the source of pain, even when endometriosis is confirmed.

PBS/IC and CPP Can Be Nearly Identical in Clinical Presentation

<table>
<thead>
<tr>
<th>Signs/Symptoms</th>
<th>IC</th>
<th>CP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Generalized Pelvic Pain</td>
<td>✓ 1</td>
<td>✓ 2</td>
</tr>
<tr>
<td>Pain With Intercourse</td>
<td>✓ 1</td>
<td>✓ 2</td>
</tr>
<tr>
<td>Pain on Bladder Filling</td>
<td>✓ 1</td>
<td>✓ 2</td>
</tr>
<tr>
<td>Voiding symptoms (frequency, urgency, nocturia)</td>
<td>✓ 1,2</td>
<td>✓ 1,2</td>
</tr>
<tr>
<td>Premenstrual Flare</td>
<td>✓ 1</td>
<td>✓ 2</td>
</tr>
<tr>
<td>Flares After Sex</td>
<td>✓ 1</td>
<td>✓ 2</td>
</tr>
</tbody>
</table>

Evaluation and Management

A different approach in evaluating CPP.

1st check for IC/PBS
Testing Potassium Sensitivity May Be a Good Predictor of a pain component from the bladder. Or Anesthetic Challenge Test

- Detects abnormal bladder epithelial permeability
- Positive in 70% to 90% of IC patients
- 81% of gynecologic patients with pelvic pain had increased potassium sensitivity
- 84% of patients with prostatitis had positive potassium sensitivity test results


Treatment

- Cystoscopy Hydrodistention for treatment, not necessary for diagnosis
- 80 cm H2O hydrostatic pressure, occlusion of urethra, 2 minutes.
- Diffuse Glomerulation, Good assessment of Bladder Volume

Glomerulation

Pentosan Polysulfate Resembles the Protective Layer of the Bladder, is the only FDA-approved oral therapy indicated for the relief of bladder pain or discomfort associated with IC.

Multimodal Pharmacologic Therapy for IC Symptoms

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Dose</th>
<th>Indication</th>
</tr>
</thead>
<tbody>
<tr>
<td>ELMIRON™ plus dietary guidelines</td>
<td>100 mg tid</td>
<td>Treatment of pain related to IC</td>
</tr>
</tbody>
</table>

Optional Adjunctive Treatment

- Hydroxyzine (Atarax®) 10 mg-25 mg qhs
  - Moderate/severe anxiety; depression associated with chronic physical disease
- Hydroxyzine (Atarax®) 10 mg-25 mg qhs or 25 mg qam and qhs
  - Management of allergic conditions and histamine-mediated reactions
  - Symptomatic relief of anxiety and tension

Pentosan polysulfate is the only FDA-approved oral drug for the relief of bladder pain or discomfort associated with IC. Atarax (hydroxyzine hydrochloride) is a registered trademark of Pfizer. ELMIRON (pentosan polysulfate) is a registered trademark of ICOS Corporation. ELINTRA [prescribing information]. Raritan, NJ: Ortho-McNeil Pharmaceutical, Inc; 2004.
Intravesical Therapy in Treatment of Chronic Pelvic Pain

by

M. K. Chung, RPh, MD, FACOG, ACGE.
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J. S. Shriver, CRNP

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R. J. Medina, MD, FACOG.
Midwest Regional Center for Chronic pelvic Pain and Bladder Control
Alliance for Women’s Health

SLS ENDO EXPO
San Diego 2005

Conclusion

• All women with chronic pelvic pain went through a 6 week placebo period without treatment and their symptoms remained the same.

• 70% of patients showed a 50% significant improvement at week 8 weeks of the bladder intravesical therapy.

• This study clearly demonstrates treating the bladder component pelvic pain can result in significant improvement of their symptoms without subjecting patients to surgeries.

Pelvic Neuroanatomy

• Pelvic organs share neural pathways
  • The spinal cord innervates several organs
  • Several organs simultaneously send input into the spinal cord

Pudendal Nerve

S 2,3,4 commonly provide fibers for PN

Compression of the pudendal Nerve is most common in the “clamp” between the sacrospinous and the sacrotuberous ligaments.

Less than 10% of surgeries have identifiable compression in the pudendal canal.

The Evil Triplet of Chronic Pelvic Pain Syndrome: Pudendal Neuralgia

Mauricio K. Chung M.D., Cherie W. Chung, Rhonda J. Medina M.D., Jackie S. Shriver C.N.P

SLS 2009 Abstract

Background: Previous publications have shown that pelvic bladder syndrome is interlinked and sometimes co-exist. The “Evil Triplets” of chronic pain syndrome includes painful bladder syndrome, interstitial cystitis, and endometriosis.

Objective: To determine the incidence of pudendal neuralgia in patients with chronic pelvic pain.

Setting: Midwest Regional Center for Chronic Pelvic Pain and Female Pelvic Medicine in Lima, Ohio from April 2008 to March 2009.

Participants: A cohort study of 96 women who presented with chronic pelvic pain with or without irritable voiding symptoms.

Results: The Potassium Sensitivity Test was positive in 73 (76%) patients. 85 (88.5%) patients had pudendal neuralgia. 67 (78.8%) pudendal neuralgia patients had a positive PST. 33 patients with painful bladder syndrome underwent intravesical therapy. Their mean PUF, AUA, and ICSI scores dropped 44%, 54%, and 51% respectively. 13 patients with less than 20% improvement after intravesical therapy were given pudendal perineuronal injections and their mean PUF, AUA, and ICSI scores dropped an additional 43%, 47%, and 51% respectively.

Conclusion: The significant incidence of pudendal neuralgia (88.5%) in this study suggests that this disease entity and the “Evil Triplets” should be at the top of the differential diagnosis for chronic pelvic pain syndrome as the “Evil Triplets.”
Pudendal nerve is a mixed nerve

Pudendal Neuralgia:
Sites of Impingement described by Robert

Pathophysiology:
Variable compression/stretch/impingement

• Symptoms may vary daily
• Symptoms are determined by the branch or fibers that are affected
• Specialist consulted depends on symptoms.

Multiple sites of pain in pudendal “territory”

- Perineal
- Labial / vaginal / clitoral
- Anal
- Suprapubic
- Crural / inguinal
- Coccygeal / parasacral
- Transverse gluteal folds

Multiple non-pain symptoms that are associated with female CPP. These may respond to treatment of pudendal neuralgia/neuropathy.

Sexual
- Dyspareunia
- Decreased libido
- Reduced secretions

Bladder
- Overactive: frequency, urgency, IC, retention, slow stream, intermittency, hesitancy
- Overactive: cramps, frequent BMs, “colitis”
- Obstructed defecation, narrow stools

Skin
- Neurogenic inflammation: “yeast vaginitis”
- Paresthesias in legs, feet; restless legs
Symptoms of PN: Somatic motor

- Urethral sphincter
- Urine retention (urethral sphincter)
- Difficulty stopping stream
- Urinary stress incontinence
- Bulbocavernosus
- Terminal dribbling of urine
- Anal sphincter
- Obstruction or incontinence

Diagnostic Criteria

- Two major criteria or one major & two minor criteria or four minor criteria
- Major criteria:
  1. Pain in the territories of at least two of the three terminal branches of the pudendal nerve: rectal inferior, perineal and dorsal clitoris
  2. “Sexual Arousal Syndrome” DYSPAREUNIA
  3. Positive Tinel sign (Trigger zone at the ischial spine or Alcock’s canal reproducing the pain)
  4. Positive block injection test (>36 h)

Sequential Treatment of PNE

- Perineal hyperprotection
- Physical therapy
- Perineural injections
  - Corticosteroids & local anesthetic agents
- Pharmacological treatment
- Surgery
  - Neurolysis, excision of ligaments and fasciotomy of the Alcock canal

Perineal Hyperprotection

- NO SITTING
  - Avoid direct pressure to the ischial tuberosities
- Cessation of activities which aggravate the pain (cycling, hip flexion (sit-ups), etc.)
- Patients may walk or do push-ups
- Standing or recumbence as much as possible
- Use of PERINEAL SUSPENSION PAD
**Perineal Suspension Pad**

**Physical Therapy**

- Pelvic floor training
- Reduce excessive perineal descent
- Reduce the symptoms

**Pharmacological Treatment**

- Pain Relief Drugs
  - NSAIDS
  - Opioids
- Tricyclic antidepressants
  - Amitriptyline, 10-75 mg at night
- Anticonvulsants
  - Carbamazepine, 600-800 mg/d
  - Gabapentin, 1200-2400 mg/d
  - Pregabalin, 100-600 mg/d

**Injection**

1. Needle is retracted about 3 cm and advanced medial
2. Sacrotuberous ligament is penetrated.
3. Continue to advance to level of ring finger until rectal or vaginal paresthesias occur.
   (Nerve may be immediately anterior to sacrotuberous ligament)

**Film to demonstrate needle position**

---

**Case SC**
Clinical case

- 32 y.o. G2P2 Hx of Chronic pelvic pain, endometriosis.
- Two laparoscopies, RSO.
- TAHLSO lysis of adhesion and continue to have pain
- Showed up in ER, R>L pelvic pain, seen by Surgeon.
- Dx. Severe adhesion, Rt. Ovarian Remnant
- Told surgeon I would see patient in office 6 weeks post op.

Clinical Case

- I just saw patient in office.
- OAB S/S
- PUF 25 ICSI 14 AUA 25
- PFD, +PST, +PPPN, + Valleix R>L.
- 8 weeks of Rescue Rinses Plus
- Elmiron ii QHS I AM
- Vistaril 25mg QHS, Elavil 25mg QHS
- PUF 10 ICSI 3 AUA 8
- Still has pain on Right > Left
- Bilateral PNPNI >> PUF 4 ICSI 2 AUA 6

Pelvic Pain Clinical Case

- Does adhesion cause pain?
- Does hysterectomy work?
- Does excision of endometriosis?
- Does oophorectomy work?

Conclusion

- Patients with Endometriosis, especially with multiple previous Laparoscopy surgeries should probably be evaluated for the PBS/IC, PN first. This algorithm could avoid most of the surgeries.
- However, laparoscopic Excisional surgery should also be performed by an expert surgeon to avoid the possibility of multiple surgeries.
- Chung M, IPPS Disney Orlando 2008

The illiterate of the 21st century will not be those who cannot read and write, but those who cannot learn, unlearn and relearn.

Alvin Toffler

Conclusion

- The eye does not see what the mind does not recognize.
- What the eye doesn't see and the mind doesn't know......doesn't exist.
THE EVIL TWINS

- What you see may not be what it is!
- IC, you see, you don’t see IC, I see.

M. K. CHUNG, IPPS Meeting SAN DIEGO 2002

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6. FW Ling, Pelvic Pain Study Group - Obstetrics & Gynecology, 1999 - journals.lww.com
14. Parsons CL et al. JSLS 2001;4:112-121
Expanding your toolbox: Nerve blocks, Trigger points, and Botox.

Nita Desai MD FACOG
No Pain, No Gain
November 17, 2014
AAGL 43rd Global Congress

Nerve Blocks

- Pain must be present
  - Patients must have pain at the time of the injection
- Evaluated for technical success
  - Anatomical position, diffusion of solution, and achieved analgesia
- Interpretation
  - Relief of symptoms, the specificity of the block, and the possibility of placebo effect

Nerve Blocks

- Types
  - Unguided
  - Guided (US, CT, MRI)
- Use smallest possible volume and needle
- For US blocks etched needle is helpful
- Risk of nerve injury
  - 1:10,000

Nerve Injury

- Overall any neuropathy – 1.9%
- Obturator – 39%
- Ilioinguinal/Iliohypogastric – 21%
- Genitofemoral – 17%
- Femoral – 7.5%
- Lumbosacral plexus – 0.2%
- Overall recovery rate – 73%

Honig, 2002

Disclosure

I have no financial relationships to disclose.
Nerve Blocks

- Triamcinolone
  - Synthetic corticosteroid
  - Eight times more potent than Prednisone
  - Dose – initial 40-80 mg, may be adjusted later
  - Adrenal suppression lasts 40 days
- Mechanism
  - Enhances anesthetic affect
  - Reduces spontaneous ectopic discharges
- Up to 70% of patients obtain long term pain relief
- Block may be repeated if / when pain returns

Nerve Blocks

- Analgesic effect in the distribution of the target nerve
  - Cotton swab
  - Alcohol swab (cold sensation)
- Check for diffusion
  - spread to other nerves may complicate the interpretation
  - Negative blocks should be repeated before concluding absence of efficacy

Nerve Blocks

- Evaluate patients at 30 minutes
- Have patients try to reproduce their pain
  - Ex: sitting, bending down, stretching
- Visual analogue scale or numerical pain scale
  - Obtain before and after the procedure
  - 50% improvement can be considered a positive outcome

Nerve Blocks

- Chemoablation
  - Image guided nerve injection with:
    - Absolute alcohol
    - Phenol 5-6%
  - Destroys myelin sheaths and causes axonal edema
  - Patients will initially have pain in the distribution of the nerve with treatment effects within 12 to 24 hours
  - Some studies show 1-2 years efficacy
  - Duration of pain relief is dependent on nerve regeneration

Nerve Blocks

- “Border nerves”
  - Iliohypogastric (IH)
  - Ilioinguinal (II)
  - Genitofemoral (GF)
- Innervate skin between abdomen and thigh
  - Injury from lower abdominal incisions
    - Appendectomy, Cesarean, Inguinal herniorrhaphy, Trocar insertion

Patient AB

- Burning numbing pain in the lower abdomen radiating to the labia (scrotum)
- Worsened by lumbar extension
**Nerve Blocks**

- **Ilioinguinal**
  - L1/T12
  - Runs parallel to and inferior to the IH and pierces the lower border of the internal oblique
  - Passes between the crura of superficial inguinal ring
  - Sensory supply
    - Mediolateral thigh
    - Mons pubis
    - Labia majorum

- **Iliohypogastric**
  - L1/T12
  - Runs downward and forward in the neurovascular plane and pierces the internal oblique above the ASIS
  - Some motor fibers to internal oblique
  - Then pierces the aponeurosis of the external oblique 2-3cm above the superficial inguinal ring
  - Sensory supply
    - Mons pubis

- **Ilioinguinal Neuralgia**
  - Burning numbing pain in the lower abdomen radiating to the labia
  - Compression of the nerve as it passes through transverse abdominis muscle at the level of ASIS
  - Worsened by lumbar extension
  - Often caused by:
    - Surgery
    - Trauma - "hockey stick injury"

- **Risk of injury in Gyn Surgery**
  - Ilioinguinal/iliogypogastric
    - Pfannenstiel incision – 3.7%
    - TVT – 1.7%
    - Laparoscopic ports – ?
    - Hernia repair -2%

- **Iliohypogastric nerve**
  - to ASIS
    - 2.1 cm medial
    - 0.9 cm inferior
    - to symphysis pubis
    - 3.7 cm lateral
    - 5.2 cm superior

- **Nerve Blocks: IH and IL**
Nerve Blocks

• Genitofemoral Nerve
  – Arises from L1/L2
  – Penetrates psoas @ level L3-4 and comes to lie on its anterior surface
  – Femoral branch follows external iliac artery and passes under the inguinal ligament.
  – Penetrates the fascia lata to supply skin sensation for the femoral triangle
  – Genital branch passes through internal inguinal ring of transversalis fascia and continues into the inguinal canal
  – Sensory supply
    • Femoral branch – Skin sensation to femoral triangle
    • Genital branch

• Ultrasound guided techniques
  – Place linear probe above ASIS
  – Orientation should be above perpendicular to the inguinal line

• Supplies

Nerve Blocks

• Traditional techniques:
  Blind II/IH
  – 2.5cm medial to ASIS on a line joining the ASIS and umbilicus
  – 3cm medial and inferior to ASIS
  – II – 4-5cm medial and inferior to ASIS
  – IH – 2cm medial and inferior to ASIS

• Supplies
Nerve Blocks

- Genitofemoral
  - Similar to IL
  - Orient probe perpendicular to the inguinal ligament
  - Final position of probe is 1 cm lateral to pubic tubercle

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Nerve Blocks

- Identify the femoral artery @ level of inguinal ring
  - Move probe cephalad, artery is seen diving deep towards the inguinal ligament
  - Oval/circular structure seen superficial to femoral artery

Nerve Blocks

- Outcomes
  - Sensory sparing
    - Nerve Blocks – 25%
  - Non-Sensory Sparring
    - Alcohol Ablation – 70%
    - Neurectomy – 87%

Trigger Points

- Goal
  - Immediate relief of acute pain
  - Long term relief of pain
  - Diagnosis of pain source

- Medications
  - Local anesthetics
  - Corticosteroids
  - Botulinum toxin

Trigger Points

Practical point:

Maximum dose of 0.5% Bupivacaine with epinephrine is:

0.5 ml per kg of body weight

Trigger Points

- Trigger points
  - “Contraction knots” (muscle knots)
  - Nodules
- Unexplained pain frequently radiates from these points of local tenderness to broader areas, sometimes distant from the trigger point itself.
- 85% of patients with CPP
  - Urologic, gynecologic, colorectal
Trigger Points

**Trigger point ≠ Tender point**

---

**Trigger Points**

- Massage
- Vibration
- Ultrasound
- Ischemic compression

- Electro stimulation
- Dry needling
- Injections
  - Local anesthetics
  - Steroids
  - Botulinum toxin

---

**Botox**

- **Multiple uses in pelvic pain**
  - Detrusor overactivity
  - Muscle spasm – Pelvic Floor Tension Myalgia
  - Vulvodynia and provoked vestibulodynia
  - Chronic anal fissure
  - Dyschezia and chronic constipation

---

**Botox**

- **Botulinum toxin A (Botox)**
  - Best done under anesthesia/sedation
  - Examine patient prior to sedation to identify most tender areas
  - After sedation perform pudendal nerve block with 0.5% Bupivacaine with epinephrine
  - Dilute 200 units of Botulinum toxin in 20 ml of NS
  - Inject using pudendal nerve block needle at volumes 1-2 ml per injection deep into levator and obturator muscles
  - Usually patients start feeling relief from Botox about a week after the injection. If no relief and muscles feel relaxed pain is most likely due to nerve injury, not muscle spasm
Botox

• Outcomes after Botox injection
  – Significant reduction in
    • Dyspareunia (VAS 80 vs. 28)
    • Dysmenorrhea (VAS 63 vs. 28)
    • Decrease in manometric pelvic pressure 37%
    • Increase in QOL (SF-12)
  – Effective in 80% of patients

Pudendal Nerve Blocks

• Pudendal nerve Entrapment vs. Neuralgia
  – Sacrotuberous and sacrospinous ligaments
  – Alcock's canal
• S 2/3/4
  – Emerges anterior sacral foramina
  – Exits pelvis through greater sciatic notch
  – Nerve runs posterior to the sacrospinous ligament at the level of the ischial spine and passes between the sacrospinous and sacrotuberous ligament.
  – Nerve then swings anteriorly to enter pelvis through the lesser sciatic notch
    • Alcock's canal
      * Alcock's canal is the fascia formed by duplication of the obturator internus under the plane of the levator ani muscle on the lateral wall of the ischiorectal fascia
      * Doral branch – clitoris
      * Inferior rectal – external anal sphinctor
      * Perineal – deep muscles of urogenital triangle

Pudendal Nerve Blocks

• Vaginal approach

Pudendal Nerve Blocks

• Technique
  – Visualize ischium forming the lateral border of the sciatic notch
  – Identify ischial spine
  – Localize pudendal artery
  – Identify the sacrotuberous and sacrospinous ligaments
    • Interligamentous plane

Pudendal Nerve Blocks

• Interligamentous plane
  – CT or Fluoroscopy
    • Transgluteal approach
    • Surrogate landmark - Ischial spine
  – US
    • Transgluteal
      * Ischial spine + Pudendal artery + Sacrospinous ligament + sacrotuberous ligament + Pudendal nerve
Pudendal Nerve Blocks

References

5. Myofascial Trigger Points of the Pelvic Floor: Associations with Urological Pain Syndromes and Treatment Strategies Including Injection Therapy.
Is hysterectomy the definitive therapy for chronic pelvic pain?

AAGL 43rd Annual Congress on Minimally Invasive Gynecology
Vancouver 2014
PELV-609: No pain, No Gain

Suzie As-Sanie, MD, MPH
Department of Obstetrics and Gynecology
Director of Minimally Invasive Surgery & Fellowship
Director of the Endometriosis Center
The University of Michigan

Disclosures
I have no financial relationships to disclosure.

Incidence of hysterectomy

- Hysterectomy most commonly performed surgery in non-pregnant women
- Lifetime risk 1:9 women
- About 430,000 hysterectomies performed in US in 2010


Endometriosis and pelvic pain are common indications for hysterectomy

1. Leiomyoma
2. Abnormal bleeding
3. Endometriosis/pelvic pain

1 of 5 cases of hysterectomy


Common clinical scenario

43 yo G3P2 with 3 year duration of chronic pelvic pain. Her menses are irregular and heavy when off hormonal suppression, and has irregular spotting while on OCPs. She has a history of stage 2 endometriosis on prior laparoscopy and is desperate for pain relief.

USN: Unremarkable.
No further children desired.
Physical: Uterine tenderness to deep palpation.
No other masses or nodularity.

She requests hysterectomy for definitive management. What should you recommend?

What do you recommend?

A. Total hysterectomy
B. Total hysterectomy + BSO
C. Supracervical hysterectomy
D. Supracervical hysterectomy + BSO
E. Hysterectomy is not likely to be helpful
Would you make the same recommendation if…?

A. She was 26 years old?
B. She had a prior negative laparoscopy?
C. She also had history of interstitial cystitis?
D. She had relief of pelvic pain with prior GnRH agonist use?
E. She had no relief of pelvic pain with prior GnRH agonist use?

Relevant questions when considering hysterectomy

A. Is hysterectomy an effective treatment for pelvic pain?
B. Are there reliable predictors of pain relief in women undergoing hysterectomy?
C. Should the ovaries be removed at time of hysterectomy for pelvic pain?
D. Should HRT be prescribed following Hyst-BSO?

Objectives

1. Define the incidence of persistent pelvic pain following hysterectomy
2. Identify risk factors for persistent pain following hysterectomy
3. Discuss the utility of bilateral salpingo-oophorectomy at time of hysterectomy for CPP
4. Identify indications and cautions when prescribing postoperative hormone replacement therapy after BSO in women with CPP

Chronic post-surgical pain is common

5-75% of patients report persistent pain following surgery

Hysterectomy is often done for CPP

No Pain → Hysterectomy → No Pain
Mild Pain → Mild Pain
Severe Pain → Severe Pain
Abnormal uterine bleeding → NO bleeding

Most women are satisfied

- 78-86% of all women undergoing hysterectomy report improvement after surgery
- 50% report improvement in mental health, physical or social function
- 60% report improvement in dyspareunia

Most women are satisfied, but there are risks

- 78-86% of all women undergoing hysterectomy report improvement after surgery
- 50% report improvement in mental health, physical or social function
- 60% report improvement in dyspareunia

Potential for serious morbidity
Regret over loss of fertility
And... significant risk of persistent pain

60% report improvement in dyspareunia

[Image 65x532 to 287x699]
[Image 325x532 to 547x699]
[Image 65x313 to 287x479]
[Image 325x313 to 547x479]
[Image 65x93 to 287x260]
[Image 325x93 to 547x260]

Prevalence of persistent pain after hysterectomy

- Persistent postop pain = 6.7 – 31.9%
- New or increased postop pain = 1 -15%

Factors associated with persistent postop pain

- Pain elsewhere (Brandsborg 2007, VanDerkirkhof 2012)
- Lack of private insurance (Hills 1995)
- Lack of pelvic pathology (Hills 1995)
- Depression (Kjerulff 2000, Hartmann 2004)
- Pain catastrophizing (Martin 2011, Carey 2013)

Factors NOT associated with persistent postop pain

- Route of hysterectomy (Brandsborg 2009)
- Preoperative dysmenorrhea (Stovall 1990)
- Preoperative uterine tenderness (Stovall 1990)
- Uterine fibroid symptom score (Brandsborg 2009)
- Uterine weight (Stovall 1990, Brandsborg 2009)
- Adenomyosis (Stovall 1990)

... i.e. clinical factors that often guide physicians to offer hysterectomy
Does response to GnRHa predict treatment response?

- RCT, n=95, Lupron vs. Placebo for treatment of CPP with suspected endometriosis
- Pain relief at 3 mo: \( p \leq 0.001 \)
  - 81% of GnRHa treated group
  - 39% of placebo treated group, NNT 2.3
- After 3 mo of Lupron treatment, pain relief in:
  - 82% of women with endometriosis
  - 73% of women without endometriosis


Remember, \( \uparrow \) Risk ≠ Guarantee

Influence of depression on risk of persistent pain

<table>
<thead>
<tr>
<th>Variable</th>
<th>Before</th>
<th>After Lupron</th>
<th>After Placebo</th>
<th>( p ) Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pain relief</td>
<td>82%</td>
<td>84%</td>
<td>75%</td>
<td>0.001</td>
</tr>
<tr>
<td>Depression</td>
<td>18%</td>
<td>20%</td>
<td>17%</td>
<td>0.005</td>
</tr>
</tbody>
</table>

“Women with pelvic pain and/or depression fared less well 24 months after hysterectomy than women who have either disorder alone or neither.”


Remember, \( \uparrow \) Risk ≠ Guarantee

Table: Quality of life and sexual function after hysterectomy

<table>
<thead>
<tr>
<th>Variable</th>
<th>Preoperative</th>
<th>Postoperative 2 months</th>
<th>Postoperative 6 months</th>
<th>Postoperative 12 months</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pain relief</td>
<td>67.2 (40)</td>
<td>46.4 (9)</td>
<td>50.3 (9)</td>
<td>52.4 (8)</td>
</tr>
<tr>
<td>Depression</td>
<td>15.6 (20)</td>
<td>14.1 (20)</td>
<td>14.3 (20)</td>
<td>15.2 (20)</td>
</tr>
<tr>
<td>Pain only</td>
<td>93.5 (62)</td>
<td>97.6 (62)</td>
<td>97.6 (62)</td>
<td>97.6 (62)</td>
</tr>
<tr>
<td>No pain or depression</td>
<td>66.8 (98)</td>
<td>67.6 (98)</td>
<td>67.6 (98)</td>
<td>67.6 (98)</td>
</tr>
</tbody>
</table>

- 80.4% of women with pain and depression report improvement in pelvic pain
- 90.7% of women with pain (no depression) report improvement in pelvic pain


Common clinical scenario

43 yo G3P2 with 3 year duration of chronic pelvic pain. Her menses are irregular and heavy when off hormonal suppression, and has irregular spotting while on OCPs. She has a history of stage 2 endometriosis on prior laparoscopy and is desperate for pain relief.

USN: Unremarkable.

No further children desired.

Physical: Uterine tenderness to deep palpation. No other masses or nodularity.

After consideration of pros/cons, patient opts to proceed with hysterectomy…

“Wait, those weren’t lies. That was spin…”
... What about the ovaries?

**Common clinical scenario**

- Relief of pelvic pain
- Prevent recurrent ovarian cysts
- Prevent recurrent endometriosis

**BSO should not be taken lightly**

<table>
<thead>
<tr>
<th>PROS</th>
<th>CONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Hot flashes</td>
<td>- Osteoporosis</td>
</tr>
<tr>
<td>- Vaginal dryness</td>
<td>- Cardiovascular disease</td>
</tr>
<tr>
<td>- Osteoporosis</td>
<td>- Dementia</td>
</tr>
<tr>
<td>- Cardiovascular disease</td>
<td>- All-cause mortality</td>
</tr>
</tbody>
</table>

**Effect of BSO on chronic pelvic pain**

- Obstet Gynecol 1990: N=99, retrospective, no difference with BSO
- Obstet Gynecol 1995: N=279, prospective, no difference with BSO
- Hysterectomy for endometriosis associated CPP
  - Likelihood of another surgery within 7 yrs of 1st surgery
  - Operative Laparoscopy: 55%
  - Hysterectomy: 22%
  - Hysterectomy + BSO: 8.3%

**Long-Term Mortality Associated With Oophorectomy Compared With Ovarian Conservation in the Nurses’ Health Study**

- Obstet Gynecol 1990: N=99, retrospective, no difference with BSO
- Obstet Gynecol 1995: N=279, prospective, no difference with BSO
- AJOG 2006: N=745, prospective, 2x risk of same or worse symptoms after BSO
- Obstet Gynecol 2000: N=745, prospective, 2x risk of same or worse symptoms after BSO

**CONCLUSIONS:** Bilateral oophorectomy is associated with increased mortality in women aged younger than 50 years who never used estrogen therapy and at no age is oophorectomy associated with increased survival.

**Operative Laparoscopy vs. Hysterectomy**

- Operative Laparoscopy: 55%
- Hysterectomy: 22%
- Hysterectomy + BSO: 8.3%
Likelihood of Success Depends on Age and Ovarian Preservation

<table>
<thead>
<tr>
<th></th>
<th>Hysterectomy only</th>
<th>Hysterectomy + BSO</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age 30-39</td>
<td>89.6 (76.0–100.0)</td>
<td>85.7 (70.7–100.0)</td>
</tr>
<tr>
<td>≥ 40 yrs old</td>
<td>64.3 (33.0–95.7)</td>
<td>96.0 (88.3–100.0)</td>
</tr>
</tbody>
</table>


Common clinical scenario

36 yo G3P2 with 10 year duration of chronic pelvic pain and stage IV endometriosis. Recently underwent TLH, BSO. Operative findings confirm bilateral 10 cm endometriomas and obliterated culdesac.

All visible endometriosis excised, anatomy normalized.

… If BSO is deemed necessary, what are the recommendations for postoperative hormone replacement therapy?

Common clinical scenario

- Limited data, mostly expert opinion

1. Benefits of HRT likely outweigh risk, in select populations
2. No reason to delay HRT after surgery, can start immediately
3. Consider combined estrogen-progestin methods in women with endometriosis
   - Unopposed estrogen may stimulate recurrence of endometriosis and/or stimulate malignant transformation of residual endometriosis

So, how do you counsel your patient who requests hysterectomy?
1. Most women that undergo hysterectomy report multiple symptoms they hope will improve after hysterectomy.
   - Abnormal bleeding & pelvic pain
2. Hysterectomy cures abnormal uterine bleeding

So, before considering hysterectomy...
- Recognize that chronic pelvic pain is generally multifactorial, often with multiple organ systems involved.
- Systematically treat all sources of pain before considering hysterectomy

If a patient fails medical therapy and chooses hysterectomy
- She should be well informed regarding the risk of persistent pain.
- Retain the ovaries as long as they appear "normal"
- If BSO is performed, consider HRT depending on age and patient factors
- If there is severe or incompletely resected endometriosis, consider use of combined estrogen-progestin
References

Pudendal Neuralgia, Pelvic Congestion, and other controversies in pelvic pain: What is the evidence?

Nita Desai MD FACOG
No Pain, No Gain
November 17, 2014
AAGL 43rd Global Congress

Evidence

<table>
<thead>
<tr>
<th>SR</th>
<th>Systematic Review</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Evidence obtained from at least one properly designed randomized controlled trial</td>
</tr>
<tr>
<td>II-1</td>
<td>Evidence obtained from well-designed controlled trials without randomization</td>
</tr>
<tr>
<td>II-2</td>
<td>Evidence obtained from well-designed cohort or case-control analytic studies, preferably from more than one center or research group</td>
</tr>
<tr>
<td>II-3</td>
<td>Evidence obtained from multiple time series with or without the intervention. Dramatic results in uncontrolled trials might also be regarded as this type of evidence</td>
</tr>
<tr>
<td>III</td>
<td>Opinions of respected authorities, based on clinical experience, descriptive studies, or reports of expert committees</td>
</tr>
</tbody>
</table>

Pudendal Neuralgia

- Painful neuropathic condition
  - 1% of the population
  - 4% of pelvic pain patients
- Anatomy
  - S2/3/4
    - Dorsal
    - Perineal
    - Inferior rectal
  - Neural “cross-talk”

Pudendal Neuralgia

- Symptoms
  - Burning neuropathic pain
  - Uni- or bilateral pain: vulva, vagina, clitoris, perineum, and rectum
  - Associated symptoms
  - Pain when “sitting”

Pudendal Neuralgia

- Causes:
  - Entrapment vs. Neuralgia
    - Mechanical
      - Entrapment
      - Cyclic
    - Surgical injury
    - Pelvic trauma
    - Childbirth
  - Viral
  - Immunologic
- Pathophysiology
  - unknown

Disclosure

I have no financial relationships to disclose.
Pudendal Neuralgia

- **Diagnosis**
  - Nantes criteria
  - Differentiate from other causes of CPP
  - History
  - Pudendal nerve block
    - Vaginal
    - CT guided

- **Treatment**
  - Medications
  - Physical therapy
  - Nerve blocks
  - Surgical decompression

- **Evidence**
  - Clinical improvement

Laparoscopic Uterosacral Nerve Ablation

- (LUNA)
  - Interrupt nerve plexuses and parasympathetic ganglia in the US ligament
    - Divide the attachments of US ligament to cervix
  - Non-cyclical, Dysmenorrhea, dyspareunia

- **LUNA Trial**
  - Prospective/single-blind/randomized controlled trial 487pts, same surgeon, minimal pelvic disease
    - VAS scale and Quality of Life
      - Follow up at 3, 6months
      - 1/2/3/5yrs
  - Evidence
    - LUNA vs. Control (SR-CDB)
      - 6 months OR 1.15 (LUNA not effective)
      - 12 months OR 1.20 (LUNA not effective)

Presacral Neurectomy (PSN)

- **Interruption of Superior hypogastric plexus**
  - Hypogastric plexus
    - collection of nerve fibers that innervate the uterus, runs in the presacral space
    - nociceptive pathway

- **Indication**
  - Central pelvic pain
    - Dysmenorrhea
    - Endometriosis
    - Adenomyosis
PSN

• Triangle of Cotte
  • Interiliac triangle

• Removal of tissue between the common iliac arteries, on top of the left common iliac vein, next to midsacral vessels, within close proximity to the bifurcation of the aorta

PSN

• Complications
  – Intraoperative:
    • Ureter
    • Vessel injury (left common, middle sacral veins)
    • Lymphatic injury
  – Postoperative
    • Chylous ascites, short term urinary retention, long-term urinary urgency, SBO, constipation, alterations of uterine contractions in labor, painless first stage of labor, vaginal dryness, backache, sexual dysfunction

PSN

• Evidence
  – Cure rate PSN vs. control
    • 6 months 87.3% vs. 60.3%
    • 12 months 85.7% vs. 57.1% (I)
    • 24 months 83.3% vs. 53.3% (I)
  – Pain relief PSN vs. control (SR-CDB)
    • 6 months OR 4.528 (PSN effective)
    • 12 months OR 3.148 (PSN effective)
  – Benefit
    • Primary and secondary dysmenorrhea
    • Long term success declines from 1st-4th year postop

Pelvic Congestions Syndrome (PCS)

• 3.8% of Adult women
• 10% Gynecologic referrals
• Venous Insufficiency = Venous incompetence
  – Ovarian
  – Internal iliac
• Chronic positional pelvic pain
  • +/- pelvic/vulvar varicosities
  • 10% have specific ovarian vein incompetence
  • Potential causal relationship to lower extremity insufficiency
Anatomy:
- Overlapping venous territories
  - Gonadal
  - Internal iliac
  - Utero-ovarian, vesicular, hemorrhoidal, sacral

Causes: Multifactorial
- Genetics
- Pregnancy

Pathophysiology:
- Primary valvular insufficiency
- Outflow obstruction

Other similar etiologies:
- Nutcracker syndrome
- Iliac vein compression
- AV malformations

Symptoms:
- Positional
- Reproducible
- Gluteal, vulvar, perineal varicosities
- Post-coital discomfort
- Ovarian point TTP
- LE varicose vein pattern

Imaging:
- Gold standard – Ovarian/Iliac catheter venography
- MRA>MRI>CT
- Transfundal Venography
- 4 or more tortuous veins
  Vein diameter >4mm
  Ovarian vein diameter >8mm

Transfundal Venography
• Treatment
  – Non surgical
    • Provera
    • Lupron
  – Surgical
    • Selective embolization – Laparoscopic/Robotic
    • Balloon occlusion – Interventional Radiology
    • Definitive – Oophorectomy/Hysterectomy
• Post procedure
  – Rare complications
    • Coil migration
    • Loss of ovary

• Evidence
  – Ovarian Vein ligation
    • 53% Pain free
    • 20% Considerably improved
    • 27% No improvement (II-2)
    • 74% Completely pain free (II-3)
PCS

• Evidence
  – Hysterectomy
    • 67% Complete relief
    • 30% Some pain relief
    • 3% Unchanged at 12 month follow up (II-2)
  – With BSO
    • VAS 7.7 → 4.6 (12 mo f/u) [2]
  – With USO
    • VAS 7.8 → 5.6 (12 mo f/u) [2]

References

MEDICAL THERAPIES FOR CHRONIC PAIN: LOOK UP AND THINK OUTSIDE THE PELVIS

Erin Teeter Carey, MD, MSCR
University of Kansas Medical Center
Center for Pelvic Pain and Sexual Health

Disclosures

I have no financial relationships to disclose.

Objectives

- At the conclusion of this activity, the participant will be able to:
  - Understand the impact of chronic pain in the United States
  - Describe the different categories of pain and the interplay between pain disorders
  - Readily review multimodal therapy for chronic pain, including medication management, lifestyle modifications, and the psychology of pain

Burden

- Institute of Medicine Report on Pain 7/2011 approximately 116 million Americans suffer from pain
- Treatment of pain costs the United States more than half a trillion dollars per year
- Pain is one of the most common reasons people consult a physician. Yet it frequently is inappropriately treated.

Categories of Pain

<table>
<thead>
<tr>
<th>Condition</th>
<th>Number of Sufferers</th>
<th>Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chronic pain</td>
<td>116 million Americans</td>
<td>Institute of Medicine of The National Academies</td>
</tr>
<tr>
<td>Diabetes</td>
<td>25.8 million Americans (diagnosed and estimated undiagnosed)</td>
<td>American Diabetes Association</td>
</tr>
<tr>
<td>Coronary Heart Disease (heart attack and chest pain)</td>
<td>16.3 million Americans</td>
<td>American Heart Association</td>
</tr>
<tr>
<td>Stroke</td>
<td>7.0 million Americans</td>
<td></td>
</tr>
<tr>
<td>Cancer</td>
<td>11.9 million Americans</td>
<td>American Cancer Society</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Duration</th>
<th>Acute Pain</th>
<th>Chronic NonMalignant Pain</th>
<th>Chronic Malignant Pain</th>
</tr>
</thead>
<tbody>
<tr>
<td>Headache</td>
<td>Present</td>
<td>Usually Present</td>
<td>Unpredictable</td>
</tr>
<tr>
<td>Prognosis</td>
<td>Poor</td>
<td>Good</td>
<td>Poor/Incurable</td>
</tr>
<tr>
<td>Associated Problems</td>
<td>Uncommon</td>
<td>Expression &amp; Anxiety</td>
<td>Manifest especially fear of loss of control</td>
</tr>
<tr>
<td>Nerve conduction</td>
<td>Rare</td>
<td>None</td>
<td>None</td>
</tr>
<tr>
<td>Treatment</td>
<td>Primary anesthetics</td>
<td>Multimodal: Often oral, slow release may play a mediating role</td>
<td>Multimodal: drugs usually play a major role</td>
</tr>
</tbody>
</table>
Chronic pain definition
- Pain that outlasts an initial tissue injury
- Pain that persists beyond reasonable time for an injury to heal
- Pain associated with a chronic process that causes continuous pain
- Pain that recurs at steady intervals
- Pain present for > 6 months

Why is it so hard to define?
- An unpleasant sensory and emotional experience associated with actual or potential tissue damage and modified by individual memory, expectations and emotions
- Pain is whatever the experiencing person says it is
- Highly subjective, leading to under treatment

Types of Pain
- Nociceptive: typical pain (tooth ache, fracture, skin)
  - Visceral
  - Somatic
    - Superficial (skin)
    - Deep (internal)
- Neuropathic
- Psychogenic
- Mixed

Types of Pain
- Nociceptive Pain
  - Somatic
    - Constant
    - Aching
    - Throbbing
    - Well-localized
  - Visceral
    - Paroxysmal
    - Deep
    - Aching
    - Squeezing
    - Poorly localized

- Neuropathic
  - Burning
  - Lancing
  - Electric
  - Shooting
Types of Pain

- Psychogenic
  Rarely the cause of pain
- Mixed
  Many pain conditions present as MIXED
  Neuropathic features
  Complex: peripheral mediators activated →
  centralization of pain
  Examples:
  Chronic pelvic pain
  Myofascial pain
  Migraines
  Chronic low back pain
  Vulvodynia

WHO Pain Ladder

Modified WHO Pain Ladder

Current Pain Ladder

Ideal Pain ‘Ladder’
### Treatment Modalities

<table>
<thead>
<tr>
<th>Category</th>
<th>Treatments</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical</td>
<td>NSAIDS, antidepressants, anticonvulsants, antipsychotics, opioids</td>
</tr>
<tr>
<td>Interventional</td>
<td>Trigger point injections, nerve blocks, sympathetic blocks, epidural steroid injections</td>
</tr>
<tr>
<td>Surgical</td>
<td>Gynecologic surgery, spinal cord stimulator, intrathecal opioid pump</td>
</tr>
<tr>
<td>Behavioral</td>
<td>Lifestyle modifications, cognitive behavioral therapy</td>
</tr>
</tbody>
</table>

### Pharmacotherapy

- **Sleepping agents**
  - Antidepressants
  - Anticonvulsants
- **Opioids**
- **Anticholinergics**
- **H2 blockers/PPIs**
- **NSAIDS**
- **Tricyclic antidepressants**
- **Nitrates for angina**
- **Anti-arrhythmics**
- **Topical agents – lidocaine, capsaicin**
- **Steroids for spinal radiculopathies**
- **H2 blockers/PPIs**
- **Topical agents – lidocaine, capsaicin**
- **Steroids for spinal radiculopathies**
- **Opioids**
- **Others – RT for spine mets, TENS/PENS units and spinal electrical stimulators**
- **CAM - Acupuncture, massage, PT, yoga, healing touch**

### Does pain category matter?

- **Nociceptive pain**
  - Anti-cholinergics for colicky pain
  - H2 blockers/PPIs for PUD/GORD
  - Steroids for enlarged organs with capsular swelling
  - NSAIDS
  - Nitrites for angina
  - Opioids
  - Others – pelvic/pelvic plexus blocks, RT for enlarged organs, massage, herbs, aromatherapy, acupuncture, healing touch
- **Neuropathic**
  - Tricyclic antidepressants
  - Anti-epileptics
  - Anti-arrhythmics
  - Topical agents – lidocaine, capsaicin
  - Steroids for spinal radiculopathies
  - Opioids
  - Others – RT for spine mets, TENS/PENS units and spinal electrical stimulators
  - CAM - Acupuncture, massage, PT, yoga, healing touch

### Non-opioid Analgesics

- **Acetaminophen**
  - First line agent for most pain d/o
  - Rapid onset
  - Potentiator of other medications
- **NSAIDS**
  - Powerful anti-inflammatory effect
  - Caution with prolonged use
- **Tramadol**
Non-opioids
- Benzodiazepines
  - Names: Diazepam, Clonazepam, Alprazolam, Lorazepam
  - MOA: Enhance presynaptic inhibition in the spinal cord by increasing inhibitory GABA transmission
  - Efficacy: spasticity, chronic orofacial pain, tension-type headache, TMD

Topicals
- Anesthetic/analgesic creams
  - Local anesthetics + anticonvulsant + benzodiazepine
  - Lidocaine patch
  - Capsaicin
  - TENS units

Depression and Pain
- Stress response releases DA, 5-HT, NE and enkephalin, raises pain threshold (analgesia)
- Stress response also increases CRH, ACTH and cortisol
- Depression is a stress that decreases release of DA, 5-HT and enkephalin, lowers pain threshold (nociception) and increases CRH, ACTH and cortisol (stress hormones)

Antidepressants
- MOA: Analgesic effect of antidepressants is considered secondary to:
  - 1. Inhibition of monoamine reuptake
  - 2. Increase 5HT and NE in descending inhibitory spinal pathway
  - 3. Increase descending inhibitory tone
  - 4. Decrease in ascending nociceptive transmission

Anticonvulsants
- Gabapentin and Pregabalin
  - MOA: binds a2-d1 subunit of Ca channel, blocking neurotransmitter release
  - Efficacy: neuropathic pain, FM, MS, myofascial pain, LBP
  - Other: Topiramate, Oxcarbazepine
Opioids

- Patient Selection
- Initial Patient Assessment
- Comprehensive Pain Management Plan
- Trial of Opioid Therapy
- Patient Reassessment
- Alternatives to Opioid Therapy
- Continue Opioid Therapy
- Implement Exit Strategy

Opioids

- MOA: Analgesic effect by binding to G protein coupled receptors

- Short-acting Opioids
  - Advantages: Fast-acting, appropriate for acute pain, breakthrough pain
  - Disadvantages: Need for repetitive dosing

- Long-acting Opioids
  - May be more appropriate for patients with a constant pain component; analgesic stability
  - Initial delayed onset of action

Opioid Risk Tool (ORT)

- Side Effects Amelioration
  - Nausea and vomiting
    - Switch opioids; anti-emetics
  - Sedation
    - Lower dose (if possible); add co-analgesics; add stimulants
  - Constipation
    - Treat prophylactically with stool softeners, bowel stimulants; non-pharmacological measures; switch opioids

Opioid Side Effects

- Side Effects Amelioration
  - Itching
    - Switch opioids; antihistamines
  - Endocrine dysfunction/reduced libido
    - Endocrine monitoring; hormone replacement; endocrine consultation
  - Edema and sweating
    - Switch opioids
  - Dizziness
    - Antivertiginous agents (eg, scopolamine)
  - Confusion
    - Titrate dose; switch opioids

Other

- Anti-muscarinics
- Antipsychotics
- Muscle relaxants
- PT/OT

Complimentary and alternative medicine

- Herbs/herb preparations – glucosamine shown to be useful in osteoarthritis; certain herbs like chamomile useful for colicky pain
- Homeopathy/flower essences – for relaxation, visceral pain
- Healing touch/Keli – using energy techniques, useful with emotional components
- Neuro Emotional Technique – A chiropractic technique also useful with emotional components
- Acupuncture
- Dry needling
- Mind – focusing therapies:
  - Meditation, yoga, guided imagery, hypnosis, biofeedback
  - Art/music/humor therapy, pet therapy
Placebo
- Patient’s belief they will be better is powerful
- Characteristics of the placebo
  - If the pill (or treatment) looks real, more likely to believe it contains active ingredients
  - Larger sized pills suggest a stronger dose than smaller pills
  - Taking two pills appears more potent than just one
  - Injections have a more powerful effect than pills

Interventional
- Surgical fulguration/excision of endometriosis if present
- TENS
- Pelvic floor physical therapy
- Nerve blocks
- Radiofrequency ablation
- Chemodenervation
- Neuromodulation
- Deep brain stimulation

Pelvic Organs Spinal Innervation Sympathetic and Peripheral Nerves
- Fallopian tubes, superior portion of uterine segment, ovaries and fallopian apparatus, broad ligament, posterior vaginal wall
- Hypogastric nerves
  - T9-12, L1, L2
  - Celiac plexus, hypogastric plexus
- Bladder segment, urethra, ureters, iliac vessels, distal ileum, rectum, uterine ligaments
- Lower vagus nerve, pudendal
  - S2-S4
  - Inf. hypogastric plexus, ilioinguinal, genitofemoral
- Lower vagina, vulva, perineum
  - S2-S4
  - Ganglio impar, pudendal, genitofemoral, ilioinguinal

Tobacco abuse
- Why does smoking increase pain?
  - HPA is down-regulated in smokers
  - Accelerates degenerative change
  - Impairs healing
  - Psychosocial factors

Sleep
- Provide instruction on sleep hygiene and limit the drugs that alter restorative sleep
  - Prevent REM sleep: long acting opioids, beta blockers, clonidine, SSRIs
  - Prevents paralysis and timing of sleep: Dopaminergic blockers
- Vitamin D deficiency (and toxicity) associated with poor sleep

Diet
- Energetic imbalance
- Inflammatory effects of diet
- Adipose tissue inflammatory effects
- Chronic low-grade systemic inflammation
- Overweight
- Arthritis 2012

Dean E et al. Arthritis 2012 Page 75
Page 75
Exercise

- Anti-inflammatory (improvement of inflammatory markers)
- Release of natural ‘endorphins’
- Improves sleep/depression symptoms
- Can be a narrow therapeutic window

Guided Imagery/Relaxation/Meditation

Cognitive Behavior Therapy

- Helps patients understand that cognitions and behaviors can affect the pain experience
- Emphasizes the role patients can play in controlling their own pain
- Provides coping skills
- Distraction therapy

Summary

- Chronic pain is a major burden in the United States
- The different categories of pain may help define treatment
- Most functional pain disorders require a multimodal therapy for chronic pain
- mediation management
- interventional and surgical procedures
- lifestyle modifications

References

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

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 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.