Pelvic and Vulvar Pain: Myofascial Contribution and evidence for Management

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Case 1: generalized pelvic pain

History: 30 y/o G0 with 2 year history of generalized daily lower abdominal pain extending “down to her toes” requiring narcotics daily, dyspareunia and urinary frequency.
Laparoscopy 2006: moderate endometriosis; 2009: no endometriosis, possible adenomyosis. US ablation and lysis of adhesions performed

Exam:
Abdomen: Positive Carnett’s test
Bimanual: normal other than tenderness
Tight tender bulbocavernositis, levator ani, and obturator internus muscles

Don’t forget to assess abdominal wall and pelvic floor
Co-morbidity

Endometriosis

IC  CPP  DYSM  DYSP  GI, GU

ICB  IBS

Abuse  Depression  PTSD

Neuropathy  Abdominal wall and Pelvic floor
Myalgia and Trigger points

FM  CFS
Chronic Pelvic Pain Neuroplasticity

Debilitating symptoms with scanty findings on ultrasound or laparoscopy or cystoscopy

– Peripheral and central sensitization
– Viscero/visceral cross-sensitization
– Viscero-muscular reflex
Visceral

- Endometriosis
- Adhesions
- Irritable bowel syndrome
- Painful bladder syndrome/Interstitial cystitis
Trigger Points: Viscero-somatic hyperalgesia
Pelvic floor is an organ system

- Muscles (levator ani)
  Support pelvic organs and control continence and elimination
  Complex reflex and voluntary control
- Nerves
  Muscles controlled by coordination of somatic and autonomic motor nerves
- Pelvic bones and ligaments
Intrapelvic muscles

Pubo-coccygeus

Ilio-coccygeus

Ischio-coccygeus

Obturator internus
Abdominal/ pelvic myofascial pain syndrome

• Intense pain in the abdominal and pelvic region originating from myofascial trigger points (MTrP)
• MTrP, in turn, are hyperirritable points usually localized within a skeletal muscle fascia or in the muscle covering fascia
• May include reproductive, urinary and gastrointestinal tract dysfunction
• Common muscles: iliopsoas, lumborum, rectus, obturator internus, levator ani,
• Innervations range from L1-S4
• Pain referred to abdomen, groin, pelvic floor, pelvis, and back
Extra-pelvic muscles

Quadriceps, tensor fascia lata, iliotibial band, thigh adductors, hamstrings
Abdominals
Iliacus and psoas
Gluteal muscles
Piriformis
Diaphragm
Somatic

Myofascial Pain
  – Pelvic floor and abdominal muscle trigger points, tender points, and spasm
  – Referred pain
  – Fibromyalgia
Neuropathy
Physical therapy evaluation of patients with CPP

- 19 women with CPP and 20 controls
- Women with CPP had more frequent musculoskeletal findings
- Asymmetric iliac crests (61% vs 25%), pubic symphysis heights (50% vs 10%), positive posterior pelvic provocation tests (37% vs. 5%) (all p ≤ .05)
- More tenderness in abdominal muscle sites and higher mean total pelvic floor tenderness scores

Tu, F et al. AJOG 2008
### TABLE 4. Differences in pain on palpation of pelvic musculoskeletal structures (patients with pelvic pain [n = 19] vs control subjects [n = 20])

<table>
<thead>
<tr>
<th>Site of examination</th>
<th>Case (n)</th>
<th>Control (n)</th>
<th>P value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Right iliacus</td>
<td>7 (37%)</td>
<td>4 (20%)</td>
<td>NS</td>
</tr>
<tr>
<td>Left iliacus</td>
<td>7 (37%)</td>
<td>3 (15%)</td>
<td>NS</td>
</tr>
<tr>
<td>Right psoas</td>
<td>13 (68%)</td>
<td>4 (20%)</td>
<td>&lt;.01</td>
</tr>
<tr>
<td>Left psoas</td>
<td>5 (26%)</td>
<td>5 (25%)</td>
<td>NS</td>
</tr>
<tr>
<td>Right rectus</td>
<td>10 (53%)</td>
<td>2 (10%)</td>
<td>&lt;.01</td>
</tr>
<tr>
<td>Left rectus</td>
<td>10 (53%)</td>
<td>2 (10%)</td>
<td>&lt;.01</td>
</tr>
<tr>
<td>Right obliques</td>
<td>3 (16%)</td>
<td>0</td>
<td>NS</td>
</tr>
<tr>
<td>Left obliques</td>
<td>5 (26%)</td>
<td>0</td>
<td>&lt;.05</td>
</tr>
<tr>
<td>Symphysis pubis</td>
<td>8 (42%)</td>
<td>4 (20%)</td>
<td>NS</td>
</tr>
</tbody>
</table>

Tu, F et al.  AJOG 2008
“Neurological factors in chronic pelvic pain: trigger points and the abdominal pelvic pain syndrome”

- Trigger point: dermatologic areas sharing innervation with painful tissues
  - 131 patients with CPP
  - Positive Carnett’s test
  - Hyperalgesic points: abdomen, sacrum, vagina
  - Successful response in 89.3% of 131 patients, with 92.6% requiring five or fewer treatments and 68.2% followed up for longer than 6 months

Abdominal wall pain

Pain often constant or fluctuating; less often, episodic

Pain intensity possibly related to posture (e.g., lying, sitting, standing)

Pain not related to meals or bowel function or menses

No findings of an intra-abdominal process

Abdominal tenderness unchanged or increased when abdominal wall is tensed (positive Carnett's sign)

Discrete, tender pain trigger point no more than a few centimeters in diameter

Trigger points often found along lateral margins of the rectus abdominis muscles or at attachments of muscle or fascia

With stimulation of trigger point, referral of pain or spreading of pain over a large area
Several studies have demonstrated the value of the physical examination and Carnett’s test in the diagnosis of abdominal wall pain.

### Carnett’s test

<table>
<thead>
<tr>
<th>Diagnosis</th>
<th>Result of Abdominal Wall Test</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Negative</td>
</tr>
<tr>
<td>Acute appendicitis</td>
<td>66</td>
</tr>
<tr>
<td>Appendix abscess</td>
<td>2</td>
</tr>
<tr>
<td>Mesenteric adenitis</td>
<td>6</td>
</tr>
<tr>
<td>Cholecystitis</td>
<td>4</td>
</tr>
<tr>
<td>Empyema of gallbladder</td>
<td>1</td>
</tr>
<tr>
<td>Large bowel obstruction</td>
<td>2</td>
</tr>
<tr>
<td>Small bowel obstruction</td>
<td>3</td>
</tr>
<tr>
<td>Diverticulitis</td>
<td>1</td>
</tr>
</tbody>
</table>

Carnett’s test

• Ask patient to localize areas of severe tenderness with one finger
• Mark with pen
• Ask patient to raise both extended legs or to perform abdominal crunch (sit-up)
• Re-palpate for persistent or increased pain
• Inject with 3 – 5 cc 0.25 % bupivocaine local anesthetic
Trigger Point Injections

- 79 patients with chronic abdominal pain who had positive Carnett's sign or pain that was constant or highly localized to an area no larger than a fingertip.
- 72 (91 percent) experienced at least 50% pain relief with 1 injection of local anesthetic, and 78% had permanent relief with 1-2 injections.

Patch, Inject, or Needle it?

- Topical local anesthetics: 60 patients randomized to lidocaine 5% patch, injection, or placebo patch. Subjective symptoms did not change with placebo, but decreased significantly with the lidocaine patch and infiltration (both, $P < 0.001$) relative to baseline$^1$

- Dry needling$^2$: less effective than injection or Botulinum toxin A$^3$

- Botox: use 10-20 units per TP; more costly

Use of alternating pressure between two fingers to confirm the location of the palpable nodule of the trigger point. (C) Positioning of the trigger point halfway between the fingers to keep it from sliding to one side during the injection. Injection is away from fingers, which have pinned down the trigger point so that it cannot slide away from the needle.
Stretch it?

- Physical therapy with stretching +/- cooling local anesthetic sprays\textsuperscript{1,2}
- Manual methods are indicated for patients who have an extreme fear of needles or when the trigger point is in the middle of a muscle belly not easily accessible by injection
- Goal: Train the patient to effectively self-manage the pain and dysfunction

\textsuperscript{1} Zohn DA, Mennell JM. Musculoskeletal pain: diagnosis and physical treatment. 1976:126–9,190–3. \textsuperscript{2} Simons DG, Travell JG, Myofascial pain and dysfunction: the trigger point manual. 2d ed. 1999
Case 2: Localized RLQ pain

HX: 40 y/o with 18 months of right lower quadrant pain following TAH for endometriosis. No relief with OCPS.

2010: laparoscopic adhesiolysis without relief. No visible endometriosis. 2011: laparscopic BSO

On Exam: Positive Carnett’s test with localized tenderness - iliohypogastric nerve region.
Iliohypogastric Neuropathy
Iliohypogastric, Ilioinguinal Neuropathy

Etiology: surgery or trauma to abdominal wall

Symptoms: burning, aching pain over nerve distribution, refer to hip, labia, anterior thigh

Increased with exercise, forced stretch of affected part, cough, sneeze, intercourse, bending, lifting
Iliohypogastric, Ilioinguinal Neuropathy

- Local anesthetic blocks:
  3 to 8 cc 0.25% bupivocaine,
  22 gauge needle
- “Neuropathic” pain medications:
  anticonvulsants, tricyclic or SNRI antidepressants
- Topical local anesthetics: cream or patch
- Activity adjustment
- Physical therapy
Case 3: Provoked vestibulodynia

- 28y/o with 3 year history of dyspareunia localized to the vaginal opening
- Exam: allodynia: cotton swab tenderness of vulvar vestibule with minimal erythema
- Bimanual: normal
- Pelvic floor muscles tight but not tender; inability to contract and relax levator ani
Vestibulodynia: provoked or unprovoked primary or secondary
Vestibulodynia

**Diagnosis:** vestibular allodynia

**Rule out:** dystrophy, dermatitis, monilia, herpes, tight hymen, estrogen deficiency, vaginismus, sexual dysfunction, pudendal neuropathy
Treatment of Vestibulodynia

- Tricyclic antidepressants: 50-150 mg HS\(^1\)
- Topical lidocaine 5% HS\(^1\)
- Topical gabapentin 6%\(^2\) or oral gabapentin
- Cognitive Behavioral Therapy or Biofeedback\(^3\)
- Physical therapy\(^4\)
- Local anesthetic nerve blocks\(^5\)
- Vestibulectomy\(^3\)

Generalized Vulvodynia

Complex pain disorder
Co-morbidities with other pain and mood/anxiety disorders
Normal vulvar exam

- Pelvic floor muscle dysfunction
- Often associated with localized provoked vestibulodynia
Myofascial Pelvic Floor Dysfunction

• Myofascial pain is a common cause of chronic vulvar pain

• **Primary**: injury, dysbehaviors

• **Secondary**: following painful or inflammatory insult
  IC/BPS: 59% - 85% have pelvic floor findings
  Vulvodynia: 85% have pelvic floor findings
  Chronic pelvic pain syndrome: >50%
ASSESS PELVIC MUSCULATURE
Assessment of the Pelvic Floor Muscles in Women with Sexual Pain

Author: Sarton, Julie

Source: Journal of Sexual Medicine
Nov 2010, Vol. 7 Issue 11, p3526-3529

Photographs of how to examine the pelvic floor muscles in women with pain are presented.
Physical therapy for vulvar pain

• sEMG biofeedback training for 16 weeks reduced vulvar pain by 83%, intercourse in 22/28 subjects¹

• PT: complete or great improvement for 51.4% of participants, a moderate improvement for 20.0% of 35 women with significant decrease in pain during intercourse and a significant increase in intercourse frequency and levels of sexual desire and arousal.²

NO CONTROLLED TRIALS

Physical therapy perspective

• Restore normal motor function and decrease negative psychological impact of pain
• Approaches vary: manual therapy techniques, directed exercises, strengthen core muscles, instruction in gait and posture

Hartmann D. Dermatologic Therapy 2010
Guide to successful management

• Detailed pelvic pain questionnaire (www.pelvicpain.org)
• Pain mapping exam, including abdominal wall test and single digit pelvic exam
• Daily pain recording (0-10 scale); include vaginal bleeding and pain “triggers”
• Liberal use of diagnostic nerve blocks and trigger point injections
• Physical therapy and cognitive behavioral therapy are crucial