Role of Physiotherapy in the Management of Persistent Pelvic Pain

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Kwong Wah Hospital
What is PPP?

• Chronic Pelvic Pain

• Pelvic Pain

• Pelvic Floor/ Pelvic Pain Syndrome
Pelvic

- Within the anatomical pelvis/ + structures that may refer to the pelvis (T10 below)
- Perineal/ vulval?
- Visceral/ somatic?
- Urogenital/ neuro-musculo-skeletal?
Definitions

• **Pelvic pain syndrome** (CPPS) is the occurrence of persistent or recurrent episodic pelvic pain associated with symptoms suggestive of lower urinary tract, sexual, bowel or gynecological dysfunction. There is no proven infection or other obvious pathology.
Guidelines on Chronic Pelvic Pain

D. Engeler (chair), A.P. Baranowski, J. Borovicka, P. Dinis-Oliveira, S. Elneil, J. Hughes, E.J. Messelink, A. van Ophoven, Y. Reisman, A.C. de C. Williams

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Table 1: Classification of chronic pelvic pain syndromes

<table>
<thead>
<tr>
<th>Axis I Region</th>
<th>Axis II System</th>
<th>Axis III End organ as pain syndrome as identified from Hx, Ex and Ix</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chronic pelvic pain</td>
<td>Urological</td>
<td>Prostate, Bladder, Scrotal, Testicular, Epididymal, Penile Urethral, Post-vasectomy</td>
</tr>
<tr>
<td>OR</td>
<td>Gynaecological</td>
<td>Vulvar, Vestibular, Clitoral, Endometriosis associated, CPPS with cyclical exacerbations, Dysmenorrhoea</td>
</tr>
<tr>
<td>Pelvic pain syndrome</td>
<td>Gastrointestinal</td>
<td>Irritable blowel, Chronic anal, Intermittent chronic anal</td>
</tr>
<tr>
<td>OR</td>
<td>Peripheral nerves</td>
<td>Pudendal pain syndrome</td>
</tr>
<tr>
<td>Musculo-skeletal</td>
<td>Sexological</td>
<td>Dyspareunia, Pelvic pain with sexual dysfunction</td>
</tr>
<tr>
<td></td>
<td>Psychological</td>
<td>Any pelvic organ</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Pelvic floor muscle, Abdominal muscle, Spinal, Coccyx</td>
</tr>
</tbody>
</table>

(Engeler et al 2012)
Prevalence of Chronic Pelvic Pain

- Women ages 15-75: 3.8-24% (Pratther at al 2009)
Common Pelvic Pain Conditions

Urological:

• Painful Bladder Syndrome
• Interstitial cystitis

Gynecological:

• vulvodynia

Muscular pain syndromes:

• PFM pain syndrome
Painful Bladder Syndrome

• Suprapubic pain is related to bladder filling accompanied by other symptoms such as increased daytime and nighttime frequency. No proven urinary infection or other obvious pathology.

(European Urology 2010)
Painful Bladder Syndrome

• Associated with irritable bowel syndrome, chronic fatigue syndrome, and fibromyalgia

• Must rule out any abnormal gynaecological findings
## Treatment: Painful Bladder Syndrome

### Table 7 – Intravesical, interventional, alternative, and surgical treatment of bladder pain syndrome/interstitial cystitis

<table>
<thead>
<tr>
<th>Treatment</th>
<th>Level of evidence</th>
<th>Grade of recommendation</th>
<th>Comment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intravesical PPS</td>
<td>1b</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>Intravesical hyaluronic acid</td>
<td>2b</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>Intravesical chondroitin sulphate</td>
<td>2b</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>Intravesical DMSO</td>
<td>1b</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>Bladder distension</td>
<td>3</td>
<td>C</td>
<td></td>
</tr>
<tr>
<td>Electromotive drug administration</td>
<td>3</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>Transurethral resection (coagulation</td>
<td>NA</td>
<td>NA</td>
<td>Hunner lesions only. See full text [1]</td>
</tr>
<tr>
<td>and laser)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nerve blockade/epidural pain pumps</td>
<td>3</td>
<td>C</td>
<td>For crisis intervention; affects pain only</td>
</tr>
<tr>
<td>Bladder training</td>
<td>3</td>
<td>B</td>
<td>Patients with little pain</td>
</tr>
<tr>
<td>Manual and physical therapy</td>
<td>3</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>Psychological therapy</td>
<td>3</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>Surgical treatment</td>
<td>NA</td>
<td>NA</td>
<td>Very variable data, ultima ratio,</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>experienced surgeons only. See full text [1]</td>
</tr>
</tbody>
</table>

PPS = pentosan polysulfate sodium; DMSO = dimethyl sulfoxide; NA = type of evidence not applicable.

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EUA Guideline
2010
Assessment

• Frequency/volume chart
• Physical examination
• Urinary cytology, urodynamic etc
Treatment- Bladder Pain Syndrome

• Patient education
• Dietary manipulation
• stress reduction
• PFM relaxation techniques:
• If detrusor overactivity then trial of drug therapy
Treatment: Bladder Pain Syndrome

• Manual Therapy: manoeuvres that resolve pelvic, abdominal and/or hop muscular trigger points and connective tissue restrictions

• Avoid pelvic floor strengthening exercises
Vulvodynia

Aetiology

• Skin?
• **Muscles?**
• Nerves?
Vulvodynia

• Generalized / localized

Friedrich’s Criteria:
• Severe pain on vestibular touch or attempted vaginal entry
• Tenderness localized to pressure within the vulvar vestibule
• Varying degrees of erythema
Vulval Pain Presentation

Primary: dyspareunia from the 1\textsuperscript{st} attempt at sexual intercourse
Secondary: dyspareunia appears after a period of pain-free coitus

Inability/ discomfort:
- Inserting finger, tampon, PV exam, coitus
- Wearing tight jeans
- Riding bicycle

High prevalence of other pelvic pain
Treatment of Vulvodynia

• Skin?
• Muscles?
• Nerves?

TENS, EMG, Dilators, manual stretches
Treatment of Vulvodynia

• “There is insufficient direct evidence for efficacy of any interventions”

Pelvic Floor Pain Syndrome

Pelvic floor *muscle* pain syndrome
- the occurrence of persistent or recurrent episodic pelvic floor pain.
- no proven well-defined local pathology.
- often associated with negative cognitive, behavioral, sexual or emotional consequences, as well as with symptoms suggestive of lower urinary tract, sexual, bowel or gynecological dysfunction.
- may be associated with overactivity of or trigger points within the pelvic floor muscles.

(IASP 2013; Engeler et al 2012)
Pelvic Floor Pain Syndrome

Sexual Pain Disorders

• Dyspareunia: the recurrent or persistent genital pain assoc with intercourse

• Vaginismus: recurrent or persistent involuntary spasm of the musculature of the outer 1/3 of the vagina that interferes with vaginal penetration, which causes personal distress

(Basson et al 2000)
Possible Factors contributing to Pelvic Floor Muscle Pain Etiology

- Gynecological disorder
- Sexual dysfunction: dyspareunia; vaginismus
- Visceral dysfunction: anorectum
- Higher centres: learning, limbic system
- Altered Tension: deep PFM; superficial PFM
- Somatic referral: PFM, pelvic joints, pelvic soft tissues
- Visceral dysfunction: bladder
Why Physiotherapist can help?

Physiotherapists have:

• Unique training & experience in managing functional & neurological bladder and bowel dysfunction

• Experience in managing musculoskeletal disorders & recognizing when symptoms may be a result of a regional dysfunction related to a painful structure

• can offer intervention outside the realm of surgery
Pelvic Floor Muscle Pain Syndromes

• trigger points or overactivity within PFM
What constitutes PFM Pain Syndrome?

• Sign: ‘tone’?
• Overactive? Spasm? Altered tension
• Trigger point? ‘tender spot’? Symptom: pain: myalgia
• at rest? on palpation? on contraction? What is the relationship between these?
• PFM Pain Syndrome
  = levator ani “tension myalgia” (Sinaki et al 1977, Segura et al 1979)
How to evaluate PFM pain?

- Presence/ absence; ordinal scale (VAS)
- McGill Pain Questionnaire
- PFD questionnaire eg: UDI and IIQ
- Pain checklists
- Pain Charts
## Measurement of PFM pain: Digital methods

<table>
<thead>
<tr>
<th>Study</th>
<th>What was measured</th>
<th>How it was measured</th>
<th>Score</th>
<th>Reliability</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kavvadijas et al (2012): pelvic muscle tenderness</td>
<td>levator ani, obturator internus, piriformis</td>
<td>“pressure was steadily applied”</td>
<td>0-10 VAS with cut-off at 3</td>
<td>ICC=0.28 – 0.87 for levator ani</td>
</tr>
<tr>
<td>Montenegro et al (2010): pelvic muscle tenderness</td>
<td>levator ani, obturator internus, piriformis</td>
<td>“as comfortable and delicate a manner as possible”</td>
<td>no pain; painful discomfort; intense pain; maximum total score of 12</td>
<td>$\kappa = 0.91$ for tenderness (levator ani not assessed independently)</td>
</tr>
<tr>
<td>Slieker-Ten Hove et al (2009): pain scale</td>
<td>Vaginal walls: anterior, posterior, left and right</td>
<td>Amount of pressure not stated</td>
<td>Dichotomous pain scale: present vs absent</td>
<td>Intra-reliability: $\kappa_w = 0.79$; inter-reliability as $\kappa_w = 0.85$</td>
</tr>
<tr>
<td>Tu et al (2008): muscle hyperalgesia scale</td>
<td>iliococcygeus, pubococcygeus, coccygeus, Obt Int</td>
<td>“small rotating movements of the index finger”</td>
<td>4-pt scale, 8 sites = composite score 0 – 24</td>
<td>$\kappa = 0.02$–0.35. Collapsed to 2-pt pain scale, $\kappa = 0.04$ – 0.63</td>
</tr>
</tbody>
</table>
Assessment

“sign”

“Tone”

Trigger Point
Trigger Point Distribution

Trigger points may also be found in several muscles, such as the abdominal, thigh and paraspinal muscles and even those not directly related to the pelvis.

Frank F. Tu, Jane Holt, Josephine Gonzales, Colleen M. Fitzgerald

Physical therapy evaluation of patients with chronic pelvic pain: a controlled study


http://dx.doi.org/10.1016/j.ajog.2007.09.002
A. Mark box in table with an “4” if affirmative if the event occurred:

<table>
<thead>
<tr>
<th>PT App't</th>
<th>Use of TENS / BFB</th>
<th>Use of other PT Tx</th>
<th>Menstruation</th>
<th>Emotional change</th>
<th>Exercise</th>
<th>Bowel action</th>
<th>Sexual arousal</th>
<th>Orgasm</th>
<th>Sexual intercourse</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Day of the month</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>6</td>
<td>7</td>
<td>8</td>
<td>9</td>
<td>10</td>
</tr>
</tbody>
</table>

B. Pain Score Table:

<table>
<thead>
<tr>
<th>Pain</th>
<th>Duration</th>
<th>Medication Use</th>
<th>Daily Routine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Absent</td>
<td>Absent</td>
<td>Improved without medication</td>
<td>No interference</td>
</tr>
<tr>
<td>Mild</td>
<td>Up to 15 min.</td>
<td>Disappeared with common medication</td>
<td>Limited some activities</td>
</tr>
<tr>
<td>Moderate</td>
<td>15 min – 3 hours</td>
<td>Disappeared with strong medication</td>
<td>Limited all activities</td>
</tr>
<tr>
<td>Strong</td>
<td>3 – 6 hours</td>
<td>Some improvement after medication</td>
<td></td>
</tr>
<tr>
<td>Severe</td>
<td>&gt; 6 hours</td>
<td>Did not improve with medication</td>
<td></td>
</tr>
<tr>
<td>Day of the month</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

C. Use the following codes to fill in the pain score table above:

<table>
<thead>
<tr>
<th>Pain (V.A.S.)</th>
<th>Duration</th>
<th>Medication Use</th>
<th>Daily Routine</th>
</tr>
</thead>
<tbody>
<tr>
<td>Absent</td>
<td>Absent</td>
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<tr>
<td>Day of the month</td>
<td>1</td>
<td>2</td>
<td>3</td>
</tr>
</tbody>
</table>

* Visual Analogue Scale (V.A.S.) of Pain: Rate your pain on a scale of 0 – 10, according to the scale below:

<table>
<thead>
<tr>
<th>0</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
<th>10</th>
</tr>
</thead>
</table>
Treatment of PFM Pain

• Lifestyle interventions  (Bergeron et al 2000)

• Cognitive behavioural intervention  (Seo et al 2005).

Limited RCT
Treatment of PFM Pain

• Exercise: esp with deconditioned patient

• PFMex:
  de-training focus (Shelly et al 2002)
  avoid strengthening exercise
  relaxation ex+ CBT: contract / relax
PFEx ......no strengthening

PFM “Down-Training” (from Shelly et al 2002)
1. Relaxation
2. Diaphragmatic breathing
3. Visualisation
4. Perineal bulging
5. Environment, ambience
6. Pelvic Floor Muscle image
7. Total body relaxation
8. Body scanning
9. Advanced training
10. Dilator practice
Treatment of PFM Pain

- Manual therapy:

  trigger point release

  check for external pelvic (buttock, abdominal) trigger points as well

Thiele protocol: massaging along muscle fibres
Treatment of PFM Pain

• Voiding & Defecation Training:
  Minimise constipation and normalised bladder capacity
  Voiding at regular intervals with a supported posture
  Regular defaecation pattern

Achieve consistent relaxation of the PF throughout defaecation and voiding
Adjunctive Therapies

• Biofeedback
Adjunctive Therapies

• TENS (Cochrane review 2002)

• Electrical stimulation for muscle re-education: per-rectum

• Magnetic field therapy
Adjunctive Therapy

• Vaginal Dilators

• Heat / Cold
Evidence

- Lack of large number of RCT

- Most studies □ 1 arm, so can’t evaluate effect of manual therapy alone
  (Thiele ’37, King ’91, Weiss ’01, Bergeron ’02, Fitzgerald ’03, Oyama ‘04)

- Study quality
Recommendation

SOGC: Canadian Society Obs Gyn 2005

- “PTs: important part of the health team in relation to CPP due to myofascial dysfunction (I)”

- Recommendation: “Patients should participate in the management of CPP due to myofascial dysfunction by actively using a home stretching and exercise program (II- B)”
A systematic review (Loving et al 2012)
- 6 randomised clinical trials, 1 cohort study and 3 case series.
  • PT varied between studies; provided in combination with other Rx
  • Therefore the ‘stand-alone’ value of PT could not be determined

  • Narrative synthesis of the results, based on effect estimates and clinically relevant pain improvement, disclosed some evidence to support multidisciplinary intervention on chronic pelvic pain

  • Based on the findings of this review, recommendations for PT in CPP clinical guidelines, textbooks and narrative reviews should be interpreted with caution due to the lack of a sufficient evidence base
PFM critically involved in the area, therefore PT can contribute greatly in the role of managing PPP; More collaborated well controlled studies are required in the future
Reference and Acknowledgement

• Dr. Helena Frawley, senior Lecturer of Melbourne University