Screening and Utilization of Pelvic PT in Gynecological Patients

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Objectives:

1. To broaden the physician’s perspective to include the screening of the musculoskeletal system when evaluating patients with pelvic dysfunction including pelvic pain, supportive dysfunctions, and post-surgical impairments

2. To understand the etiology of pelvic floor tension myalgia, complex urological/rectal dyssynergia syndromes, myofascial restrictions, and other musculoskeletal conditions and learn how to identify patients manifesting them

3. To gain knowledge of how to screen for the best candidates and when to refer to pelvic physical therapy appropriately

Demystifying Pelvic Physical Therapy

Case Study #1

45 y/o female with history of daytime urinary urgency and freq is post-op 16 months from her TAH w/ BSO for ovarian cysts. She reports daytime urgency/freq resolved but 9 mo later, new symptom of debilitating nocturia up to 6-8 times a night. Cysto (-), urodynamics indicate OAB. No signs of prolapse, Levator strength 4/5.

Patient given fluid restriction instructions before bedtime without change. Trial of oxybutynin unsuccessful.

Case Study #2

26 y/o postpartum woman G3P2 delivered 12 weeks ago with complications from grade 4th degree laceration, and retained placenta. Noticed that she had fecal incontinence. Now has to return to work but cannot feel losses of stool which happen 4 times a day after her normal am bowel movement.

Case Study #3

47 y/o G0 woman with concurrent medically managed psychiatric disorder indicates new deep ache in perineum, difficulty with walking and sitting prolonged. Labial pain and pain with pulling legs together, UA to tolerate any sexual activity. Pelvic Sono (-), Recent epidural for chronic LBP made no improvement, and she has been treated with AB therapy for a mild UTI.

Possible adenomyosis with trial of DepoLupron x 2 mo without relief of pain. CT taken (-) and no evidence of hernias.
Typical Medical Evaluative Techniques

- History
- Physical
- Labs
- Imaging
- Urodynamics
- Laparoscopy

Differential Diagnosis

- Gynecological disease
- Gastrointestinal disease
- Urological disease
- Hernia and nerve entrapment syndromes
- Orthopedic / Neurological conditions
- Psychological disorders

What may be missing?

Potential PT GREEN Flags

- Repeated treatment of culture negative “urinary tract infections”
- Repeated treatment for “yeast infections”
- Exacerbation of symptoms by certain activities such as intercourse or being seated for a long period of time
- Urinary incontinence worsens (especially after operation)
- Urinary hesitancy or retention (especially immediately post-op)
- Negative diagnostic laparoscopy
- No response to intervention focused on other systems
- Patient brings in article showing you about their condition being treated with Pelvic PT

The Pelvic Floor: Forgotten Muscles

Management of Chronic Pelvic Disorders

- “The approach to the patient with chronic pelvic [pain] must take into account six major sources of the origin: 1) gynecological; 2) psychological; 3) myofascial; 4) musculoskeletal; 5) urological; and 6) gastrointestinal. Only by addressing and evaluating each of these components by a very careful history and physical examination and by approaching the patient in a comprehensive manner can the source of the [pain] be determined and appropriate therapy provided.”

James Carter, MD, PhD, F.A.C.O.G.
What is so important about the Pelvic Floor?

Called upon in all aspects of life.
- **1. Supportive** — forms a structural base & prevents descent during intra-abd pressure
- **2. Sphincteric** — assists in urethral & rectal closure pressure
- **3. Sexual** — blood flow, orgasm
- **4. Stabilization** — assists in SI, pubic symphysis, sacroccygeal, lumbopelvic and hip stability
- **5. Sump pump** — venous and lymphatic pump for the pelvis

Why unique?

- Never electrically silent.
- Close proximity & relationship with surrounding organs.
- Dual innervation by the somatic and autonomic nervous systems
  - Voluntary NS S2-S4 (pelvic nerve)
  - Autonomic NS roots T11, T12, S2-4
- Emotions held here
- Biomechanical intersection
- Easily injured

Pelvic Floor PT addresses:

**Under-active Pelvic Floor**
- Pelvic organ prolapse
- Incontinence
  - urinary &/or fecal
  - stress
  - urge
  - mixed

**Overactive Pelvic Floor**
(Pelvic Floor Tension Myalgia)
- Pelvic pain syndromes: Vulvodynia, VVS, IC, vaginismus dyspareunia, corpodynia, anismus/rectal pain
- Urgency/frequency
- Urinary retention
- Urinary Incontinence
- Outlet constipation

Pelvic Floor Dysfunctions

ICS 2002 PF Clinical Assessment Terminology

- **Classifications of Abnormal Pelvic Floor**
  - No activity - by palpation
  - Underactivity - muscle EMG low
  - Hypotonicity - lax and stretched - Palpation
  - Overactivity - muscle tension EMG
  - Hypertonicity - short and limited excursion - Palpation
  - In-Coordination - impaired timing and recruitment

Pelvic PT also addresses:

- Articular malignment
- Muscular stability of posture
- Restrictions in connective tissue
- Local and system lymphatic congestion
- Adaptations to function and activities
**Levator Ani**

- **Referral Patterns**: Perineal region, sacrum, coccyx, rectum, perirectal, pelvic floor, urethra, bladder, buttocks, suprapubic region, lower abdomen and the low back.
- **Common pain descriptors**: Sharp, stabbing, aching, radiating, burning, or throbbing, raw like an open wound, tearing sensation, heavy feeling in the vaginal area or golf ball in the rectum discomfort.
- **Clinical relevance**: Can make sitting uncomfortable. Coccygeal pain is often due to myofascial trigger points in these muscles. Can be a source of low back pain especially in late defecation.

- **Referral Patterns**: Hip, low back, sacrum, coccyx, pelvic floor, vagina, posterior thigh.
- **Clinical Relevance**: Causes pain during and after defecation. Limits sitting. Can be a source of low back pain especially in late defecation.

**Obturator Internus**

- **Action**: Causes external rotation when the hip is in extension and abduction when the hip is flexed.
- **Referral Patterns**: Posterior to the greater trochanter (hip pain), upper portion of the posterior thigh, and coccygeal region, genitalia.
- **Common pain descriptors**: Pain and fullness in the rectum.
- **Clinical relevance**: The bladder is closely related with the obturator foramen via the fascia, membranes and muscles. Adjacent to pudendal nerve canal.

**Coccygeus**

- **Action**: Pulls the coccyx forward and supports it after it has been pushed back for defecation or childbirth; helps stabilize the SI joint, sacrum and coccyx. Similar to the PC and IC, the coccygeus directly opposes the glutaeus maximus as it extends the coccyx.
- **Referral Patterns**: Hip, low back, sacrum, coccyx, pelvic floor, vagina, posterior thigh.
- **Clinical Relevance**: Causes pain during and after defecation. Limits sitting. Can be a source of low back pain especially in late defecation.

**Piniformis**

- **Action**: Primarily external rotation of the hip; may abduct the hip when the hip is in 90 degrees of flexion; stabilizes the hip and may place a strong oblique force on the sacrum. An active kinetic chain stabilizer during gait.
- **Referral patterns**: Low back; lateral to the sacrum; posterolateral aspect of the hip; pain in the buttock, coccyx, postero-trochanteric, leg and foot; inguinal region.
- **Clinical relevance**: Can contribute to deep dyspareunia, pain on defecation, SI dysfunction, lumbopelvic pain, sciatica, pudendal neuralgia or pudendal nerve entrapment.

**Contribution of pelvic floor muscles to stiffness of the pelvic ring**

- **Patients with weak abdominal and extrapelvic hip muscles tended to stabilize for functional movements by over contracting PFM.**
- **Simulated tension in the pelvic floor muscles increased the stiffness of the SI joints by 8.5% in females.**
- **In normal females, pelvic floor muscles have the contribute with the extrapelvic muscles to increase stiffness of the pelvic ring.**

*Pool Goudzwaard et al 2004*
Musculoskeletal Ultrasound or X-ray

- Sonographic (or X-ray) measurement of pubic symphysis width
- Most pregnant women with symphysis width of more than 9.5mm experience pain
- Average width non-pregnant = 4.6mm
- Average width pregnant without pain = 6.1mm
  (Schoellner 2001)

Pelvic Floor and Hip Relationship

- Arcuate tendon is connector for pelvic floor to appendage moving entity – Obturator Internus
- Lateral portion of Levator Ani – Iliococcygeus demonstrates portions of purely skeletal muscle
- Sciatic nerve sandwiched between piriformis superiorly and Obturator Internus gemelli inferiorly.
- Overuse theory anterior displacement of femoral head creates OI spasm holding pattern
- Labial tear injuries by fall or repetitive deep squat can refer pain from deep hip joint to perineum

Pelvic Floor and Abdominal Relationship

- Membranous layer of abdominal fascia is continuous with the superficial perineal fascia and surrounding the ramus at adductor origin.
- The Superficial Perineal fascia then dives deep to the UGT

Co-Activation of Transversus Abdominus and Pelvic Floor

- Co-activation is the normal recruitment pattern
- Pelvic floor muscles (PFM) contract first (mediated by central nervous system)
- Transversus Abdominus (TrA) contraction is initiated and enhanced by active PFM contraction
- TrA contraction corresponds with voluntary urethral closure
- Quality of PFM and TrA contraction can be directly affected by position of the spine; neutral spine relates to maximal TrA activity
- You inhibit the abdom wall, the best pf contraction is 25% of maximal contraction
- Pelvic joint pain & hip pain adversely affect contraction
  (Sapirstein RR, Hodges 2001, Neumann & Gill Study, 2002)

Common Indications for P.T. Referral Urinary Incontinence

- Patients who fail verbal instruction for PFM ex, and may need further muscle assessment
- Patients who demonstrate PFM strength 0-4, but even 5/5 but poor coordination
- Patients who verbalize their interest in being active participant in conservative treatment of this condition
- Patients that have been adequately screened for infection, prolapse, fistula, and disease
Common Indications for PT Referral

Urinary Retention or Voiding Dysfunction
- Patients who present with injury or disruption of the compressor urethrae (External urethral sphincter)
- Patient who may have impaired mechanical extensibility (myofascial restriction) around the bladder (scarring)
- Patients who demonstrate inability to relax pelvic floor during emptying phase

Common Indications for PT Referral

Urge and Frequency
- Rationale of PFM exercise, training, intervention to treat urge incontinence is:
  1. Teach patient how to utilize reflexive inhibition of the detrusor by contracting PFM.
  2. Utilize behavioral techniques that work for patient to delay/suppress abnormal urge and re-shape habitual voiding practices.
  3. Institute voiding patterns that are individualized for patients lifestyle and level of understanding.
  4. Educate in dietary bladder irritants, fluid management, and mechanical habits that increase urge.
  5. Remove myofascial barriers to normal abdominal mobility around the bladder and urethra.

Common Indications for PT Referral

Urge and Frequency
- Patient with onset of urge and frequency that is not associated with active infection
  - Possibly after surgery, procedure, or illness/previous infection
  - Not clearly related to fluid regulation or medications
  - Concurrent with muscle tenderness upon pelvic exam and poor quality of PF contraction

Common Indications for PT Referral

Pelvic Pain (not post-op onset)
- Onset with injury, delivery
- Onset secondary to visceral (organ) pain condition
- Progressive multi-system involvement (dysfunction)
- Worsens with activity, gravity, positional
- Onset or exacerbation with stressors emotional or traumatic
- Complaint of painful exam, tender “sidewalls”, painful tampon insertion etc.
- Postural variances obliquity or overuse (sport)
- History of prolonged chronic maladaptive habits
  - Fecal holding, urine holding, chronic straining

Etiology of PFTM

- Injuries to the pelvic floor
- Biomechanical dysfunction
- Dysbehaviors of the pelvic floor
- Inflammatory pain disorders involving pelvic viscera
Etiology of PFTM: Viscera

Inflammatory pain disorders involving the pelvic viscera:
- endometriosis
- fibroids
- chronic cystitis
- IBS
- Interstitial cystitis

The noxious stimuli slowly induces an upregulation in the balance of regulatory sacral reflexes.

Clinical Findings of PFTM

- Tender PF muscles, especially levator ani and its lateral insertion into the tendinous arch
- Poor PFM awareness / impaired proprioception
- Inability to release or eccentrically lengthen the muscle / poor voluntary relaxation
- Active trigger points reproduce “the pain” and its referral pattern
- Latent trigger points are less tender but don’t reproduce the referral pattern
- Muscle weakness

EMG Readings: PFTM & Normal

PFTM often leads to...

- Ischemic tissues
- Connective tissue restrictions (paniculosis)
- Pain
- Decreased function
- Onset of new diagnoses
- Adverse neural tension & compression of pudendal nerve and/or sciatic nerve
- Neuropathic pain (upregulated CNS creates overflow)

Biomechanical Dysfunction

Noxious Stimuli

Sacral Cord

Pelvic Floor Muscle Dysfunction

Pelvic Neuropathic Hypersensitivity

History - Most important questions to ask

- Childhood injuries, such as falls off swings, fences, bikes?
- Trauma from prior surgeries, a difficult pregnancy or complications of vaginal delivery?
- Abuse history?
- Sports or activities such as gymnastics, ballet, volleyball, aerobics or cheerleading that could have repeatedly overloaded the pelvic floor?
- Occupation?
- Pain with intercourse or hours after intercourse occur?
- Pressure, heaviness or an aching feeling in the suprapubic, vaginal or rectal area? Any pain in the groin, buttocks or hips?
- Urinary hesitancy or a slow urine stream?
- History of constipation?
"A normally functioning anus is a gift from God" - Anonymous

- Anal sphincter injury
  - Recognized visual injury 2-25%
  - Occult injury 35%
  - Persistent defects after repair 40%
  - Anal incontinence after repair 20-40%

**P.T. Approach to AI**

- Intra-anal electromyographic biofeedback increases anal squeeze (EAS).
- Sensitivity and awareness training
- Overall 50% cured of sx, 72% improved
- Behavioral Training includes: defecation mechanics, normalizing bowel motility/consistency, education on good bowel habits, guidance on eliminating dietary triggers

**Common Indications for P.T. Referral**

- **Fecal Incontinence/Dysnergia**
  - Patients report progressive difficulty holding gas
  - Patients report staying in bathroom to continue wiping
  - Patients indicate stool which is extremely hard to get out and come out in very thin form
  - Patient indicates they push so hard to get stool out, and on observation you notice they are contracting PFM vs relaxing them

- **Post Operative Scar Restrictions**
  - History of multiple surgeries in same incision site
  - History of poor scar formation
  - Observation of thickened tissue, pocketing, swelling, indentations, discoloration
  - Complaints of widespread paraesthesia
  - Complaints of function of local organs that compression, stretching or limited movement

**Pubococcygeus must stretch 3.26 times its normal length during vaginal delivery**

- Addressed structure:
  - Pelvic alignment
  - Closure of pubic symphysis split with aid of SI belt
  - Decrease of diastasis recti
  - Thoracic and rib mobility and decrease rib flare/assoc. symptoms
  - Tone normalization of the pelvic floor muscles, ensure healthy healing of episiotomy scars, abdominal scars
  - Strength training of the PF with and without biofeedback - eccentric release: progression to upright. Integration into other core exercises utilizing bi-planar strengthening
  - PT education: voiding techniques, self-correction muscle energy techniques, proper body mechanics for mothering, exercise to reduce post c-section gas pains, use of binder as necessary

(Delancey, 2003)
Common Indications for P.T. referral

Vaginismus/ Dyspareunia

- Painful speculum exam, difficulty with digital exam (including but not exclusive to virgin patients)
- Reported inability to have intercourse, or resume intercourse, or use tampons
- Poor post contraction relaxation after observing a pelvic floor contraction
- Patient indicates change in ability to tolerate penetration following stressful event, physical change (post surgical)
- If traumatic psychological event, PT best outcomes if after or during concurrent psychological counseling

Soft Tissue Assessment

- Over 30 muscles attach onto the pelvis
- Many of these have a direct influence on the pelvic floor and must be examined
- Start with external musculature first
  - Assess for trigger points (taut bands with tender points)
  - Assess connective tissue restrictions
    - legs, hips, pelvic girdle, abdomen, gluteals and spine

Internal Pelvic Muscle Assessment

- Supine, lithotomy, Single digit exam
- Muscle testing: grade 0-5
- Palpation of each muscle: PC, B, IL, S, CI, O, IS
- Assess connective tissue restrictions
  - legs, hips, pelvic girdle, abdomen, gluteals and spine
- Assess for trigger points (taut bands with tender points)
- Ask pt to "squeeze and relax"...
- Progression specific to patient

PT Approach to

Vaginismus/ Dyspareunia

- Directed and progressive pelvic floor muscle stretching
- Progressive relaxation and stretching
- Dilator self-stretching with graduation when ready
- Education on positions of comfort and control specific to patient
- Can involve the spouse to aid with program progression

Treatment/ Pelvic Floor Rehabilitation

- Manual Therapy - TpP release, myofascial and scar release, contract and relax, mobilization of osseous structures, passive stretch
- Neuromuscular reeducation/ sEMG guided pelvic floor biofeedback
- Ther Ex - Active progressive resistive exercise for core, hamstring, hip and PFM. Progressed to challenge in gravity and 3 planes of movement
- Pt education - self treatment techniques and home exercise program, functional therapeutic activities that mimic daily demands and disability

Adjunctive Therapies:

- Hot baths/ cold compresses
- Ultrasound
- Vaginal suppositories
  - Baclofen
  - Cyclobenzaprine
  - Elavil
  - Lidocaine
Trigger Point Therapy/ Pudendal Nerve Blocks w/ concurrent PT

Objective:
To evaluate pelvic floor physical therapy with trigger point injections for the treatment of dyspareunia, vaginismus, and levator myalgia.

Study Design:
A retrospective study of women with dyspareunia, vaginismus, and levator myalgia undergoing physical therapy. Outcome measures analyzed were Visual Analog Pain (VAS) scores, number of visits, and use of trigger point injections.

Results:
31/60 (52%) underwent manual physical therapy alone (PT) and 29/60 (48%) underwent physical therapy with trigger point injections (TPI). Initial VAS scores were higher in the TPI group, 8.8 vs. 7.8, p=0.008. VAS scores decreased 72% in the PT group and 69% in the TPI group. Discharge VAS scores between groups were similar, 2.7 and 2.2, p=0.4. There was no difference in the number of visits between groups, p=0.14.

Conclusions:
Pelvic floor physical therapy is an effective treatment for dyspareunia, vaginismus, and levator myalgia. Trigger point injections did not significantly change treatment outcomes.

Physical Therapy Program
- Usually 1x a week or every other week, 45 min
- Within 4-6 consistent treatments notice changes, make adjustment to treatment plan and goals
- Need specific treatment environment
- ICD-9 all urogyn ones OK, but must have related musculoskeletal/myofascial for P.T. usually 728 prefix
- Evaluation and Patient Update/ Progress Report
- With our without chaparone/ spouse/partner
- Very patient driven
  - Tolerance, Dx, Symptom, Comfort level, self limiting

Multi-disciplinary team
- Physician/ NP/ PA
- Pelvic Physical Therapist
- Psychotherapist – specialist in sex therapy
- Pain Management Specialist, and possibly
  - Acupuncturist
- Physiatrist if global disability or orthopedic comorbidity
- May also need:
  - Support Group
  - Coordinate with primary care or other specialists
  - Associations online and mailed information

SUI Treatment
- Introduced by Kegel [1948]
- Intensive training more effective than home instruction, Bo et al 1990.
- Post training 5 years, 70% demonstrated no visible leakage during cough test. Bo and Talseth 1996.
- Cure rates range from 56-75% Wilson et al 1993.

Treatment Generalities
- Individualized
- Younger patients and those with shorter duration and less comorbidities do best
- Correct predisposing elements, posture, stress, sleep disturbances, environmental factors
- Treat all sources of pain
Case Study Outcomes

- Case #1 Severe Nocturia: Seen for 7 visits of treatment to PFM, compressor urethrae and abdominal scar, found that Primary Restriction was lying flat in bed tightened her scar and that created severe bladder pressure and urge. Nocturia reduced to 2x a night, still working on normalizing PFM Strength.

- Case #2 Postpartum Fecal Incontinence: Seen for 4 visits, after initiating PFM strength aimed at improving Puborectalis resting tone and bulk as well as specific EAS training she has decreased her FI to 2 losses vs 4.

- Case #3 Achy Severe Pelvic Pain: Found to have severe PFM spasm which are currently being addressed in PF Rehab, 1 visit.

In Summary....

- Pelvic floor muscles are most commonly missed component in patients presenting with pelvic complaints.
- Look and listen for the red flags, ask about incontinence, sexual functioning & pain.
- Pelvic floor muscular exam integration.
- Physical therapy is a first-line treatment option.
- Successful therapy requires treatment for all components of patient’s dysfunction.

CS Lewis

- The magic is not in the medicine but in the patient’s body - in the recuperative or self-corrective energy of nature. What the treatment does is to stimulate natural functions or to remove what hinders them.

Your local Pelvic PT’s

- Sunset:
- Baldwin Park:
- Fontana:
- Antelope Valley
- Downey
- Orange County
- San Diego
- South Bay
- Thousand Oaks
- West LA
Break Out Table Instructors:

- Strength:
- Spasm:
- Skeletal:
- Self care:
- Sex: