IPPS Pre-Conference Session

Clinical Foundations:
An Integrated Approach to the Evaluation and Treatment of Chronic Pelvic Pain

Wednesday October 11, 2017
7:30 a.m. – 5:30 p.m.

Location: Renaissance Washington DC Hotel | Penn Quarter (2nd Floor)

Male Pelvic Pain

• Nel E. Gerig, MD

• The Pelvic Solutions Center

• Denver, Colorado
Pelvic pain

- Bladder pain syndrome/Interstitial Cystitis or other inflammatory conditions
  - Muscle tension
    pelvic floor/girdle, trunk/glut/thigh
  - Neuropathy – pudendal, other

Pelvic pain contributing factors

- Hypermobility/biomechanics
- GU (BPH), GYN, GI issues
- Pelvic girdle pathology
- Lumbar and abdominal pathology
- History of trauma
- Anxiety, depression, catastrophizing
Pelvic pain in the male gender

- Penile pain
- Scrotal/testicular pain
- Perineal pain
- Ejaculatory pain
- Anodyspareunia
- "Prostatitis"

Acute pain conditions

- Urethritis
- Cystitis/bacterial prostatitis
- Epididymitis/orchitis
- Testicular torsion
- Fournier’s gangrene
- Referred pain to testicle (kidneys/ureters)
- Peyronie’s Ds.
Chronic pelvic pain

• BPS/IC
• Pudendal/other neuralgia
• Muscle tension/spasm

Anatomy
Innervation of male genitalia

• Testicle
  T10 – L2

• Penis
  pudendal n. \(\rightarrow\) sensory/motor
  cavernous n. \(\rightarrow\) supply erectile tissue

• Scrotum
Testicular embryology

Innervation -- SCROTUM

- **Genital branch of genitofemoral nerve** – derived from the femoral plexus and supplies the anterolateral aspect of the scrotum.
- **Anterior scrotal nerves** – derived from the ilioinguinal nerve and supplies the anterior aspect of the scrotum.
- **Posterior scrotal nerves** – derived from the perineal nerve and supplies the posterior aspect of the scrotum.
- **Perineal branches of posterior femoral cutaneous nerve** – derived from the sacral plexus and supplies the inferior aspect of the scrotum.
Physiology
Mechanism of penile erection

- Arteriolar dilation → more blood flow
- Sinusoids expand → compression of venous plexus →
- Trapping of blood in sinusoids by minimizing outflow
- Ischiocavernosus mm contract → RIGIDITY
- Artiolar constriction → detumescence

Neural mechanisms of erection and ejaculation

1. CNS -- brain, spinal cord
2. Somatic nervous system (sensory, motor)
3. Parasympathetic nervous system
4. Sympathetic nervous system
Spinal and peripheral neural mechanisms of erection/ejaculation

- Sympathetic  T10-L2 → sacral, caudal chain ganglia
- Parasympathetic  S2-4 → pelvic plexus → cavernous n.s
- Somatosensory/motor  Pudendal n. →
  penis, ischiocavernosus, bulbocavernosus

**Emission**
- physiologic process - distal epididymis, vas deferens, seminal vesicles, prostate gland, prostatic urethra, BN

**Expulsion**
- discharge of products of emission from urethra through coordinated actions of bladder neck, urethra, and pelvic striated mm

**Ejaculation:** forcible ejection of seminal fluid from urethral meatus that commonly accompanies sexual climax and orgasm
**Emission**

BN closure (sympathetic action)

Secretions from prostate, vasa, SVs MIX

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**Expulsion**

Relaxation of ext. urethral sphincter (closed BN)

**Clonic contractions of:**

- prostate,
- bulbospongiosus,
- ischiocavernosus,
- levator ani,
- transverse perineal muscles

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International Pelvic Pain Society
Complex interaction of
• sympathetic NS
• parasympathetic NS
• somatosensory NS
• skeletal muscle contraction

= Viscerosomatic convergence

Erection and Ejaculation

Pathology
Chronic pelvic pain in MEN

• BPS/IC
• Pudendal/other neuralgia
• Muscle tension/spasm/trigger points

Male pelvic pain ≠ prostatitis (but many physicians think so) WHY?

01
Stamey & Meares classification of UTIs in men:
• Four-glass collection

02
VB1 – urethral
VB2 – mid-stream voided urine
EPS – expressed prostatic secretions
VB3 – post-massage urine

03
1968 SIX patients
NIH Classification System -- Prostatitis

• I. Acute bacterial prostatitis

• II. Chronic (recurrent) bacterial prostatitis

• III. Chronic prostatitis/chronic pelvic pain syndrome
   - Inflammatory
   - Noninflammatory

• IV. Asymptomatic prostatitis (inflammation)

NIH III: CP/CPPS

Chronic prostatitis/chronic pelvic pain syndrome

• Pelvic pain for > 3 of the previous 6 months
• Urinary symptoms
• Painful ejaculation
• ABSENCE of documented UTI
• 75 – 90% of cases of “prostatitis”
NIH III: CP/CPPS

- Prevalence: 10 – 15% male population
- 2 MILLION outpatient visits/year in US
- Etiology: “unknown
- MAY be result of infectious/inflammatory initiator which results in neurological injury leading to increased pelvic floor muscle tone

- DX: “If UTI is not present, take cultures when pt. is symptomatic.”
  Murphy 2009

- RX: goal: provide symptom relief
  4 – 6 weeks fluoroquinolone
  NSAIDS, alpha-blockers
  ??? “pelvic floor training” or biofeedback (but need RCCT)
  Third-line: 5-alpha reductase inhibitors, GAGs, quercetin, sawpalmetto
  Refractory cases: surgical intervention (TURP, TUMT)

Murphy, et al  Drugs. 2009;69(1): 71-84
CP/CPPS: a newer approach

- Presence of wbc ≠ correlate with symptoms
- The prostate may not even be the SOURCE of symptoms
- Etiology may be related to psychological stress
dysfunction in immune, neuro, endocrine systems

UCPPS  Urological Chronic Pelvic Pain Syndrome

UPOINT – a newer approach to UCPPS
**UPOINT -- Urinary**

NIH/CPSI urinary score > 4
obstructive symptoms
bothersome: urgency/frequency/nocturia
elevated PVR
RX: alpha blockers, anticholinergics

**PROBLEM:** focused on prostate, bladder
**BETTER:** Think IC, PFTM, PN

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**UPOINT -- Psychological**

Depression, anxiety, maladaptive coping
RX: counseling/CBT, antidepressants, anxiolytics
**PROBLEM:** not much
**BETTER:**
- Depression, Persistent depressive disorder
- Generalized anxiety
- Panic disorder
- Health-related anxiety – catastrophizing, rumination, and emotional reactivity about symptoms
- PTSD or h/o trauma -- accidents, abuse (across life-span)

RX: include EXERCISE, trauma rx., treat sleep
**UPOINT – Organ specific**

prostate tenderness, wbc in EPS, hematospermia, prostatic calcifications

RX: anticholinergics
alpha-blockers
phytotherapy
prostate massage

**PROBLEM:** focused ONLY on prostate
**BETTER:** assess ALL contributing factors

**UPOINT -- Infection**

bacteria in prostatic fluid
response to antibiotics

RX: antimicrobials

**PROBLEM:** Infection may be an initiator or may contribute to the exacerbation of symptoms

**BETTER:** Don’t treat the ENTIRE problem as an infection

**QUESTION:** Why do some respond to abx. in absence of infection?
UPOINT – Neurologic/Systemic

Clinical evidence of central neuropathy, such as:
- Pain beyond pelvis
- IBS, fibromyalgia, chronic fatigue syndrome

RX: Neuromodulators, rx. other conditions

**Problem:** Sensitization occurs w/in wks/mo.s
**What about the pudendal nerve?**

**Better:** Understand neurological upregulation PN and OTHER neuropathies -- dx. and rx.

Neuralgias which contribute to pelvic pain

1. Pudendal
2. Obturator
3. Ilioinguinal Liliohypogastric
4. Genito-femoral
5. Cluneal
6. Other
7. Maigne’s Syndrome
UPOINT -- Tenderness

muscle tension/trigger points -- abdomen and pelvic floor
RX: PT, exercise

PROBLEM: Good start! BUT, it’s not JUST the abdomen and pelvic floor

BETTER: assess MORE – back/paraspinals, QL, iliopsoas, adductors, hips, pelvic girdle/gluts, perineum

Male Pelvic Pain -- TIPS

• Penile/urethral pain
• Scrotal pain
• Testicular pain
• Perineal pain
• Pain during or after ejaculation
Penile pain

• Perineal trigger points (bulbo, trans perineii)

• Other trigger points –
  levators, obturator internus, inferior recti, pyramidalis

• Neuralgia – pudendal, ilioinguinal

Urethral pain

• Trigger points – perineal, pyramidalis/inf. recti, levators, obturator internus

• Pudendal neuralgia

• Hip pathology
Scrotal pain

Pain felt in the scrotum may be referred from visceral or somatic structures with the same nerve supply
pudendal or ilioinguinal neuralgia
(esp. hyperesthesia)
muscle tension/trigger points
pelvic floor
inferior recti
gluteus medius/minimus
obturator internus and externus
quadratus lumborum

Testicular pain

• May be difficult to differentiate testicular from scrotal source of pain
• Maigne’s syndrome (TLJ synd.)
  • soft tissue restrictions
  • genitofemoral, ilioinguinal n.

• Consider pudendal neuralgia
• Distention of renal pelvis/upper ureter
Ejaculatory pain

• Neuralgia (pudendal, other)

• Trigger points – any esp. bulbospongiosus Ischiocavernosus levators

Pay special attention to:

• Iliacus
• Inferior rectus/pyramidalis
• Bulbospongiosus
• Transverse perineii
• Levators, esp. anterior pubococcygeus
• Obturator internus
• The “geography” between T10 – L2 and the scrotum
Pelvic pain in men

- Neuromyofascial
- +/- Inflammatory

- Think
  BPS/IC
  Pudendal (+ other) neuralgias
  Muscle tension

- Rx. all contributing factors

[Diagram: Inflammatoty issues, Biomechanical issues, Neuromyofascial Pain, Neuropsychological issues]