The Pelvic Pain Puzzle

Treatment Basics

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Overview of Pelvic Pain Treatment

- Multimodal treatment
  - You need a team!
  - Need ancillary and allied health care involved
- Medications for Centralized Pain
- Medications for Peripheral Pain
- Specific protocols
- Patient home treatments
Treatment Team Members

- Physical therapy (pelvic floor PT)
- Psychiatry
- Chiropractor
- Massage therapy
- Sex therapy
- Psychology
- Pain management
- Urology/GI
Patient Case #1

47yo G2P2 with diagnosed provoked vulvodynia (vestibulodynia). Her symptoms started about 15 years ago while on a health kick, and have progressively gotten worse. She has seen 6 other providers for her pain over the last 14 years. She has been extensively imaged, with negative scans. She has used multiple medications, including topicals and narcotics. Her last GYN performed a vestibulectomy, which was unsuccessful. She presents to you desperate for relief.
Centralized Pain Mechanisms

- Develops over time, 6+ months to develop, can be as quickly at 6 weeks depending on pain mechanism
- May develop while asymptomatic in high pain tolerant patients
  - Athletes
- History of abuse
  - Highest risk in patients with sexual abuse under the age of 13
  - Altered development of pain reception tolerance levels
- Altered brain chemistry
  - Possibly permanent
  - May involve epigenetics
Centralized Pain Meds

- **First Line**
  - Antidepressants (MAOI)
  - Some antiepileptics

- **Second Line**
  - Tramadol
  - Cannabinoids?

- **Inconclusive evidence**
  - Other antiepileptics (topiramate etc.)
  - SSRIs
  - NMDA receptor antagonists
  - Mexiletine
Centralized Pain Meds - First Line

- **Antidepressants**
  - Mechanism of action: modulation of descending inhibitory controls (may have other mechanisms)

- **Tricyclics (amitriptyline, nortriptyline)**
  - **Amitriptyline Dosing:** 25-100mg qhs (max 150mg)
  - Serious reactions (rare)
    - HypoTN/HTN
    - Arrhythmias
    - Tardive dyskinesia
  - Common reactions
    - Drowsiness - always dose 1-2h before bedtime
    - Anticholinergic effects

- **Contraindications**
  - Cardiac disease, glaucoma, prostatic adenoma and seizure
  - Avoid high doses in pts > 65
Centralized Pain Meds - First Line

- Antidepressants cont.
  - SNRI (Duloxetine, Venlafaxine)
    - Duloxetine Dosing: 60mg po daily (can start at 30)
      - Serious reactions (rare)
        - Suicidality (mostly in teens)
        - Hypomania
        - Serotonin syndrome
    - Common reactions
      - Nausea
      - Headache
  - Contraindications
    - Liver disease
    - HTN
    - Use of tramadol
Centralized Pain Meds - First Line

- **Antiepileptics**
  - Mechanism of action: Calcium channel alpha2-delta ligand binding
  - Gabapentin and Pregabalin
  - **Gabapentin Dosing:** 300-1200mg TID (wean up from 100mg to effective dose)
    - Serious reactions (rare)
      - Depression/suicidality
      - Erythema multiforme, Stevens-Johnson
    - Common reactions
      - Dizziness
      - Somnolence
      - Weight gain
  - Contraindications
    - Lower dose in renal patients
Centralized Pain Meds - Second Line

- **Tramadol**
  - Mechanism of action: $\mu$-Receptor agonist and monoamine reuptake inhibition
  - **Tramadol Dosing:** 50-300mg ER max dose 400mg/d
  - Serious reactions (rare)
    - Seizures
    - Serotonin syndrome
    - Respiratory depression
  - Common reactions
    - Dizziness
    - Nausea
    - Constipation
  - Contraindications
    - MAOI use
    - History of substance abuse
Cannabinoids

- Mechanism of action: CBD oil, activate descending inhibitory controls, reduce inflammatory mechanisms, peripheral reaction
- Dosing: not identified in medical literature
- Known side effects
Peripheral Pain Mechanisms

- Alteration of electrical properties of peripheral nerves
  - Affects balance between inhibitory and excitatory signalling
- Damage to nerves and tissue increases transmitter release
- Hyperexcitable spinal neurons have reduced thresholds and increased receptive field size
- Synaptic strengthening due to repetitive activation of C fibers
Peripheral Pain Meds

- Neuropathic medications
- Anti-inflammatories
- Immune modulators
- Neurotoxins/Muscle relaxants
Peripheral Pain Meds

- **Neuropathic medication**
  - Topical amitriptyline: theoretical sodium channel blockade, raising activation threshold
  - Topical gabapentin: same action as central
  - Topical lidocaine: sodium channel blockade, patches or ointments
  - Topical ketamine: non-competitive NMDA receptor blockade, blockage of glutamate production
  - Topical capsaicin: repetitive exposure induces TRPV1 receptor refractory state, inhibiting receptor function
  - Topical ambroxol?: potent sodium channel blockade
Peripheral Pain Meds

- Anti-inflammatories
  - Remove inflammatory context for nociceptor irritability
    - Inhibition of prostaglandin synthesis, limit lipo-oxygenase pathway
    - Reduce sodium and calcium movement across peripheral membranes
    - Lower central neurotransmitter release related to inflammation
    - Prevent depolarization of second-order nociceptors
- NSAIDs: ibuprofen, baclofen, diclofenac (can be used topically)
Peripheral Pain Meds

- **Immune modulators**
  - Cannabinoids: modulate neuronal and immune cell function
    - Also anti-inflammatory actions
      - Reduces arachadonic acid
      - Suppression of cytokine production
  - Antihistamines
    - Modulate mast cell mediated inflammatory response in vasculature (well studied in IC)
    - Cyproheptadine, ranitidine, hydroxyzine, fexofenadine
Peripheral Pain Meds

- Muscle relaxants/Neurotoxins
  - Topical Baclofen: GABAB receptor agonist, changes membrane permeability slowing C fiber activation
  - Cyclobenzaprine: anti-spasmodic, anti-cholinergic
  - Botulinum toxin: inhibits voltage gated sodium channels (Nav). These channels are in high concentration in DRG nociceptor fibers.
Specific Protocols

- **Interstitial Cystitis/BPS/CPPS**
  - 6 weeks of bladder instillations (multiple cocktails)
  - Elmiron 100mg 3x/day
  - Hydroxyzine 4x/day (I often only dose at night, due to sedative effect)
  - Amitriptyline 25-50mg in the evening
  - IC diet: [www.ic-diet.com](http://www.ic-diet.com) (low acid)

- **Vaginismus**
  - Gabapentin or pregabalin, amitriptyline
  - Pelvic floor specific PT
  - Vaginal dilators with desensitization
  - Some literature to support surgical placement of large dilator with ketamine anesthesia
Specific Protocols

- Vulvodynia/vestibulitis/vestibulodynia
  - PT, CBT, and sex therapy
  - Gabapentin or pregabalin
  - Amitriptyline
  - Physical therapy
  - Minimizing irritants
  - Topicals
    - Lots of cocktails
      - I use: desoximetasone compounded with bactroban and lidocaine
      - I’ve also used gabapentin, ketamine, amitriptyline, and capsaicin
  - Injected corticosteroids? Botulinum toxin?
  - Vestibulectomy- LAST RESORT for localized provoked/vestibulitis
Specific Protocols

- **IBS**
  - Low fodmap diet
  - Gluten free diet (even without celiac)
  - Increased fiber, pre/probiotics
  - Constipation predominant:
    - First line: miralax, MoM, psyllium fiber
    - Second line: lubiprostone, linaclotide
  - Diarrhea predominant
    - First line: loperamide, bentyl
    - Second line: lotronex, eluxadoline, rifaximin
Specific Protocols

- Non-relaxing PFD
  - Physical Therapy
  - Gabapentin, pregabalin, amitriptyline
  - CBT
- Fibroids
  - Hormonal manipulation
  - Leuprolide acetate
  - IR, UAE, HIFA
- Endo
  - Hormonal manipulation
  - Central sensitization meds
  - Laparoscopy- removal of endo lesions, hysterectomy with/without BSO.
Patient home treatments

- Avoiding inflammatory foods
  - Gluten, refined carbs, fried food, processed meats, red meat, margarine/shortening/lard
- Add anti-inflammatory foods
- Avoid dietary irritants (IC/IBS/Vulvodynia)
- Probiotics, prebiotics
- Avoid unnecessary antibiotics
- Exercise: yoga, pilates, HIIT
- Meditation
- Deep breathing
- Increase happy emotions
- Emotional support
Pearls

- Best to do both central and peripheral meds together
- Physical therapy for everyone!
- Consider alternative therapies- chiro, acupuncture
- Refer liberally to CBT and sex therapy
- If you aren’t sure of the diagnosis- consider pain mgmt referral
- Counsel patients on importance of context and what they can do at home to alter it
References

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