Sexual Pain
From Physiology to Management

Tami Rowen MD MS
Assistant Professor
UCSF Department of ObGyn&RS

Outline
- What is pain
- How to Evaluate Sexual Pain
  - Physical Exam and Differential Diagnosis
- What are the treatment options and what is their evidence

Disclosures
- I have no relevant disclosures

Case 1
- A 35 yo G0 presents to your office c/o inability to have IC
- She reports that she has never been able to insert anything into her vagina and thought she was just tight and small
- She tried to have IC age 18 and it caused such a severe sharp and burning pain that she never attempted
- She now has a partner who is ok not having IC but they’d like to TTC
- She denies any h/o trauma, has no other medical problems and is otherwise happy in her life
- She saw another gynecologist who advised dilators and lubricants
Case 2

- A 27 yo presents to your office with 5 years worsening pain with intercourse
- She has a past medical history of irreg menses and started OCPs at age 15
- She always felt "small" but was able to achieve IC with prior partners (3 total) and was able to have IC with current long partner but felt she was having a burning and tearing sensation that over the years has lead to the inability to tolerate any penetration.
- She first presented to her PCP 3 years ago with these complaints and was sent to PT which did not help
- She finally went to a gynecologist who diagnosed her with genital atrophy and started her on estrogen cream, which has not seemed to help

Case 3

- A 59 yo G3P2 presents with worsening pain with IC over the last 6 months
- She has always enjoyed sex with her partner but feels like she is having a sharp pulling sensation
- Menopause was 12 years ago, she started HT at age 45 for perimenopausal symptoms, which includes topical estrogen
- She was having PMB and an EMB showed CAH so she underwent a TVH a few months prior to this pain beginning
- She has a h/o HTN and a remote h/o BCC
- She regularly exercises with swimming and pilates
- She believes something went wrong with the surgery and that is the cause of her pain

What is pain

- There is a difference between acute and chronic pain
  - **Time**
    - Seconds/minutes vs months/years
  - **Function**
    - Protecting body from harm vs none
  - **Evocation**
    - Physical stimulus vs no true stimulus
  - **Brain circuitry**
    - Spinothalamic vs limbic

Are there actual differences in the CNS of women with pelvic pain?

Sutton et al JSM 2015
What are the different kinds of pain that women experience

- Pain is picked up by nociceptors
  - Free nerve endings that detect stimuli
  - All release glutamate and transmit via nerves
- Actions are strongly influenced by inflammation, neuropathic states, and even hormones
- Key component is somatic (skin, muscle, bone) vs visceral pain (hollow organ distention)
- The lower third of female genitals (vulva/urethra/vagina) have a combination of somatic and visceral innervation

Cervero F physiol rev 1994
Farmer et al Pain 2013

Bottom Line

- Pain involves a complex interplay of localized nociceptors and nerve endings
- The pain tracts travel through the spinal cord
- The ultimate destination and processing of pain lies in the brain
- Women with chronic pain have differences in their pain processing compared to controls

So now that we know the complex anatomy, how do we evaluate someone with a pain complaint?

1. Develop a timeline of the dyspareunia.
   - Has intercourse always been painful?
   - Has tampon use always been painful?
   - Did the pain start acutely or gradually?
   - Is the pain only during intercourse or is there pain without provocation?
   - Since the pain began, have there been episodes of completely pain free sex?
   - Any precipitating factors: trauma, medications, exposures

Every evaluation must begin with a thorough history....

- Determine the location of the pain
  - Is the pain upon penetration?
  - Is the pain inside the vagina?
  - Is there pain with deep thrusting?
  - Are there any positions that are more/less painful?
  - Is there pain with clitoral stimulation?
  - Is there post-coital pain?
- Elicit symptoms: Burning, rawness, cutting, tearing, searing, aching, dull, throbbing, tearing, dryness, pruritus?
Physical exam

- Visual inspection, cotton swab test
- Bx if indicated
- Vaginal exam with pediatric/pederson speculum- insert w/o pressure on vestibule
- Examination of pelvic floor muscles
- Palpation of the urethra and bladder
- Examination of the uterus, ovaries

Cotton swab test

- Begin by touching the inner thigh and clarifying what “soft” is
- Begin by touching the labia majora, interlabial sulci and minora
- Touch lateral and medial to Hart’s line
- Touch the vestibule at Skenes and Bartholins ostia
- Can use 1-10 scoring system for pain

Visually inspect the vulva

Use a hand and swab to help yourself
Can also use a mirror to show patient what you are doing

Take home point: Examine the skin

- Look for erythema, fissuring, lichenification, keratosis, atrophy, ulcerations
- Kellog Spadth ISSWSH 2016
- Shief JOCC 2010
Next: evaluate the pelvic floor muscles

What are the muscles you are feeling for?

A Different View

Principles of the pelvic floor

- PFM are an integral support system: work with large postural groups to maintain skeletal position
- PFM provide local “front, middle, rear” support
- PFM enhance Female Sexual Response (place pressure on deep dorsal clitoral vein to prevent venous escape; facilitate sensation during intercourse)

PFM can contribute to FSD if they are either overactive or underactive

What are you looking for?

- **Tenderness!**
  - Feel each muscle individually and watch response
  - Ask her if this mimics her pain
    - Often “ovarian pain” is referred from pelvic floor
  - Women may feel discomfort but pain is not normal

Pelvic Floor Muscle Dysfunction

- Causes more than just tenderness on palpation!
- Is implication in the pathophysiology and clinical presentation of vestibulodynia
- Causes sensations of burning, tearing
- Caused by and leads to urinary symptoms
- Caused by and leads to GI symptoms
- Historically was called “vaginismus” but this term is removed from DSM-5 and new classifications of pain categories

What about the common gyn conditions everyone assumes is source of sexual pain?

Deep Dyspareunia and Chronic Pelvic Pain of Endometriosis

- Up to 1/3 of women with chronic pelvic pain have endometriosis
- Limits sexual activity
- May lead to sexual avoidance
- Lowers self-esteem and negatively affects partner relationships
- Deep infiltrating (USL) involvement linked to most severe impairment on sexual function

Denny E, Mann C. J Fam Plann Reprod Health Care, 2007; Chapron et al Hum Repro 2005

Thibault-Gagnon S, Morin M. J Sex Med. 2015
Bomstein et al J Lower Gen Tract Dis 2016
Rowen TS, goldstein A ISSWSH 2018 (in press)
Pathogenesis of Deep Dyspareunia

- Endometriotic lesions infiltrate uterosacral ligaments
- Contains considerable nervous innervation
- Severity of pain correlated with neural invasion by endometriotic lesions
- Tension on uterosacral ligament may trigger pain during intercourse
- Fibrosis, cyclic hemorrhage, release of prostaglandins and inflammatory mediators contribute to the pathogenesis of pain


Visual Terms

- Deep endo endo control
  - Ferrero S et al Fertil Steril 2005

Treatments

- Highly related to fertility goals
- Surgery’s role is in dx and short term benefit
- Long term management with pain meds and hormones
  - NSAIDs
  - CHC
  - DMPA
  - GnRH Agonists
  - LNG-IUD and nexplanon implant

Dunselman Ga et al Hum Repro 2014

What About Other Common Gyn Conditions?
Fibroids and Sexual Health

- Prevalence up to 25%, but ~80% in all hysterectomy specimens
- Presence of fibroids may increase dyspareunia and non cyclic pelvic pain
- Other studies show no difference in fibroids and FSD as compared to other common surgical problems
  - Only 1 used FSFI: post/fundal most related
  - When older women included, myomas were associated with higher rates of dyspareunia and less sex satisfaction

REFERENCES

What are the most updated classifications of sexual pain?

- Vulvar pain caused by a specific disorder
- Infectious (e.g., recurrent candidiasis, herpes)
- Inflammatory (e.g., lichen sclerosus, lichen planus, immunobullous disorders)
- Neoplastic (e.g., Paget disease, squamous cell carcinoma)
- Neurologic (e.g., postherpetic neuralgia, nerve compression, or injury, neuroma)
- Trauma (e.g., female genital cutting, obstetrical)
- Iatrogenic (e.g., postoperative, chemotherapy, radiation)
- Hormonal deficiencies (e.g., GSM/VVA, lactational amenorrhea)
- For vulvodynia (no clear cause of pain) describe based on location, provocation, temporal pattern, onset

REFERENCES
- Bornstein et al 2015

So back to our patients
Case 1

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Physical exam
**What is her diagnosis?**

- Primary provoked vestibulodynia
  - No clear cause on physical exam
  - Can see and appreciate tenderness at vestibular glands
  - If these glands were biopsied would show hyperinnervation

  LeClair et al Obstet & Gynecol 2011

**What are some treatments and what is the evidence?**

- Oral pain adjuvants: tricyclic antidepressants and/or anticonvulsants
  - Data very limited
- 3 SR showed no clear benefit
  - Most studies descriptive,
  - Success rates of TCA 27-100%
  - Success of anticonvulsants 50-82%


- Well designed RCT of TCA + lido/placebo showed no benefit to TCA
  - Placebo v cream/tab 33% vs 36% despiramine/lido

  Foster et al Obstet Gynecol. 2010

- No RCT of anticonvulsants

**What about the topical treatments?**

- Lidocaine
  - Descriptive studies have shown sig benefit
    - Zoibouni et al Obstet Gynecol 2003
  - No RCT published on lido vs placebo for vestibulodynia
    - Evidence for benefit in “dyspareunia” from presumed GSM

- Other treatments
  - Capsacin 0.025-0.5% showed improvement in case series
  - Gabapentin (2-6%): one series showed benefit
    - Boardman et al Obstet Gynecol 2006
  - Botulinum Toxin (case series), Nifedipine (2-4%)(RCT showed NO benefit), Nitro 0.2%(case series)
    - Tieu Arch dermatol 2011; Bornstein et al J Pain 2010; Walsh et al J Gend Specif Med 2002

**The final solution: Vestibulectomy**

- Multiple case series have shown sig improvement post vestibulectomy n<200
  - Kletterman et al J Min Inc Gyn 2018; Swanson et al J Repro Med 2014; Tommoa Acta Oste Gyn Scan 2011

- One small RCT(78 women) showed benefit of vestibulectomy over CBT and surface EMG, however no difference at 2.5 year f/u
  - Bergeron et al Obstet Gynecol 2008

- Most common procedure is modified vestibulectomy (3-9 o’clock) but this is controversial

  Goetsch PCOGS 2008
What about Case 2

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Physical Exam Findings

- What is this?

Do OCPs cause vulvodynia

- YES, in some women!
- Mult CC showed association
- However, largest pop based study (n=906) showed no association
  - Reed et al BJOG 2013
- Some evidence showed possible genetic predisposition based on AR
  - Goldstein et al J Sex Med 2014
- If you suspect this is cause, switch to another equally or more effective MOC
- However, do NOT ignore other etiologies, like a dermatosis

What about Case 3?

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Physical Exam

- Pt with mild atrophy, no tenderness on q tip
- Pelvic exam revealed well healed cuff with no tenderness
- Evaluation of pelvic floor revealed significant tenderness over ileococcygeous, obturator internus and piriformis
- Exam consistent with pelvic floor muscle dysfunction

Treatment Options

- Best Treatment seems to be physical therapy
- NO RCTs
- Evidence shows internal therapy, dilation and home exercises with biofeedback are beneficial
  - Reissin et al J Sex Marital Ther 2013
- Cochrane Review found no true treatment options with strong data
  - Melin et al 2012
- Case series have shown benefit from botulinum toxin or steroid injection
  - Pacik Sex Med 2017; Bertolasi et al Obstet Gynec 2009; Doumouchtsis et al Arch Gyn Obstet 2011

Final Thoughts

- No single treatment is ideal for very woman
- Do not forget to do a thorough physical exam
- It is crucial to keep in mind the biopsychosocial model of female sexual dysfunction
- Nearly all women with any long term pain will have a sig psychological component that needs to be addressed

Questions?