Genito-Pelvic Pain/Penetration disorder - Female Sexual Pain Disorder
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Female Pelvic Floor Muscles (PFM)
Superficial genital muscles
- Superficial transverse perineal
- Bulbocavernosus
- Ischiocavernosus

Perineal membrane
- Compressor urethrae
- Urethrovaginal muscle

Sphincter urethrae
Pelvic diaphragm
- Levator ani muscles
  - Pubococcygeus (pubovisceral)
  - Puborectalis
  - Iliococcygeus
  - Coccygeus (ishiococcygeus)

International Continence Society Definitions (ICS) (Rogers 2018)
- Obstructed intercourse: Vaginal intercourse that is difficult or not possible due to obstruction by genital prolapse or shortened vagina or pathological conditions such as lichen planus or lichen sclerosis
- Shortened vagina: perception of a short vagina expressed by the woman or her partner
- Tight vagina :
  - Introital narrowing: vagina entry is difficult or impossible (penis or sexual device)
  - Vaginal narrowing: decreased vaginal calibre.
- Scarred vagina: perception by the partner of a "stiff" vagina or a foreign body (stitches, mesh exposure, mesh shrinkage) in the vagina
- Dyspareunia: Complaint of persistent or recurrent pain or discomfort associated with attempted or complete vaginal penetration.
  - Superficial (Introital) dyspareunia: Complaint of pain or discomfort on vaginal entry or at the vaginal introitus.
  - Deep dyspareunia: complaint of pain or discomfort on deeper penetration (mid or upper vagina)
- Dyspareunia with penile vaginal movement: pain that is caused by and is dependent on penile movement.
- Non coital sexual pain: pain induced by non coital stimulation
- Post coital pain: pain after intercourse such as vaginal burning sensation or pelvic pain.
- Vaginismus: recurrent or persistent spasm of vaginal musculature that interferes with vaginal penetration

Genito-Pelvic Pain/Penetration disorder (ICS)

- Persistent or recurrent difficulties with 1 or more of the following:
- Vaginal penetration during intercourse
- Marked vulvovaginal or pelvic pain during intercourse or penetration attempts
- Marked fear or anxiety about vulvovaginal or pelvic pain in anticipation of, during, or as a result of vaginal penetration
- Marked tensing or tightening of the pelvic floor muscles (PFM) during attempted vaginal penetration.

Genito-pelvic pain / penetration disorder - with 5 dimensions (Binik 2010)

- Percentage of successful penetration
- Pain with vaginal penetration
- Fear of penetration or pain
- PFM dysfunction
- Medical co-morbidity

PFM dysfunction

- Overactive PFM – increased EMG at rest or during times when it should be relaxed
- PFM myalgia – pain on palpation of the PFM without increased muscle activation
- PFM tension myalgia – pain on palpation of the PFM with increased EMG activation
- PFM myofascial pain / trigger points (TrP) – hyperirritable nodule located within a taught band. (Spitznagle 2014)
    - Compression of the trigger point – significant local pain, jump sign best reliability
    - Local twitch response: rolling finger across muscle band = local contraction. Worse reliability for location of taught band and local twitch response
    - Referred pain, PFM = sacrum, OI = sacrum and posterior thigh
    - Overall identification of TrP is unreliable (Lucas 2009)

Etiology of Genito-pelvic pain / penetration disorder

Organic factors

- Increased PFM tone - increased tension in tissue (Haefner 2005, Reissing 2004)
    - Contractile - Overactive PFM
        - Elevated EMG resting tension - fear, pain, neurogenic
        - Excessive contraction before or on initiation of penetration
    - Non-contractile
        - Normal EMG
        - Contracture of connective tissue - radiation, surgical scaring, disease
- Skin
    - Increased sensitivity - local or global
    - Atrophy
- Painful organs
    - Pelvic organ prolapse
    - Adhesions - endometriosis, surgery
    - Painful bladder syndrome / Interstitial cystitis
- May have normal sexual desire (Lue 2004, Bason 2004)

Psychosocial factors (Simon 2018; Frederick 2016)

- Fatigue
- Stress
- Self-esteem
- Relationship issues
- Co morbidities and illness
- Religious, cultural and personal beliefs about sexuality
- Low libido.
- General stress response – PFM contracts in normal subjects in response to threatening situation (van der Velde 2001)
- Fear of pain and penetration – phobic avoidance (Lue 2004, Haefner 2005, Bason 2004, Binik 2010, Reissing 2004, Silverstein 1989; Lieblum 1989)

Occurrence

Gynecological cancer survivors - dyspareunia after surgery and or radiation (White 2006)

- 67% reported dyspareunia
- 55% reported superficial pain
- 40% reported deep pain
- 36% reported both superficial and deep

Prevalence in sexual dysfunction clinics

- 5-17% (Harish 2012)
- Reasons why patients asked for embryo transfers under sedation (Souza 2018 Rio)
    - Anxiety (27%)
    - Fear (27%)
    - Overreaction (23%)

PFM myofascial pain (Bassaly 2011)

- Demonstrated in 78.3% of IC patients with at least one myofascial trigger point
- 67.9% of patients had numerous areas of trigger points

Evaluation of Genito-Pelvic Pain/Penetration disorder

- Study investigates the dx of vaginismus by PT, MD, and psychologist (Reissing 2004)
    - Poor diagnostic agreement and not able to differentiate vaginismus from Provoked Vestibulodynia (PVD)
    - Women with vaginismus did have higher tone PFM and higher occurrence of defensive avoidance distress behaviors
- Predictive validity for vaginismus - Significant increased level of catastrophic pain thoughts and enhanced harm avoidance (Borg 2011)

Psychosocial / family / work

- Activity level and regular exercise
- Stable relationship with good communication
- Reaction to stress

Central sensitization

- Strongest predictor - disproportionate, non-mechanical pain, and unpredictable pattern of pain provocation
- Logistical regression - cluster of 3 symptoms and 1 sign predictive of CS (Smart 2012)
    - Disproportionate, non-mechanical pain, and unpredictable pattern of pain provocation
    - Pain disproportionate to type of injury or pathology - low pain tolerance
    - Strong association with maladaptive psychosocial factors (negative emotions, poor self efficacy, pain behaviors) - Pain responds to stress and anxiety
    - Defuse / non-anatomic areas of pain and tenderness on palpation, "spread" of pain
- Pain longer than 12 weeks
- Pain increased by small movement or no movement,
- Burning, shooting, crushing, allodynia or hyperalgesia
- Multiple systems involved – sleep, bladder, bowel, muscles, joints, immune system
- Depression, fear avoidance, catastrophization
- Previous treatment failure - treatment adherence for active treatments is low
- Central sensitization questionnaire (Mayer 2012) https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3248986/

Outcomes measures

- Vulvar questionnaire
- PISQ-IR (Constantine 2017)
- FSFI

Questions About Dyspareunia

Frequency of sexual interaction

- Varies widely among the general population
- There is no “normal” frequency of intercourse
- “Can you have intercourse whenever you like?”

Lack of desire and limited arousal

- Common problems with pelvic pain patients
- May require intervention from a sexual counselor
- During arousal, lubrication and engorgement of the vaginal tissues prepares the vagina for penetration

Do you have pain on initial penetration or with deep penetration?

- Entrance penetration pain is usually associated with
    - Adhered introital scars (episiotomy, vaginal surgery)
    - Dermatological lesions (lichen sclerosis, vaginismus)
    - Vulvodynia
- Deep pain can be related to
    - PFM spasm
    - Organ dysfunction, Abdominal adhesions

How much pain do you have and how long does it last?

- Pain is usually rated on a visual analog or numeric scale
- Length of pain after intercourse can give some indication of the irritability of the tissues
- Pain that increased during intercourse may be related to rubbing or irritability
- Pain that gets better as intercourse proceeds may be tension

Complex scales can be used to determine sexual function

- 0 – no pain or limitation of intercourse
- 1 – some pain with intercourse but no limitation in frequency of sexual activity
- 2 – significant pain with intercourse and limitation in frequency of intercourse
    - Level 2 may be further clarified with percent of successful intercourse
- 3 – severe pain and inability to tolerate any penetration - # of months

Does intercourse position affect pain?

- What positions make it less painful?
- More painful?
- Many women find differences in pain with varying positions
- Discussion of sexual positions can be simple or very complex requiring referral to other professionals
- Some possible concerns with common positions include:
    - "man on top": most pressure on the posterior structures of the vagina
    - "woman on top": most deep penetrating; the women has more control over depth
    - "doggie style" (quadruped with rear entrance): least organ trauma/movement
    - "spoon" (side lying with the man behind): least penetrating

Can you achieve orgasm?

- Does it increase pain?
- Orgasm is a complex process and is seldom easily interpreted
- Orgasm is parasympathetic
- Pain with orgasm may indicate PFM spasm

Musculoskeletal assessment of trunk, pelvis, hips

- Hip range of motion for sexual positions - adductors, glutueals, piriformis
- Relaxation of abdominal wall
- Joint dysfunction

Patient education books

Carter M, Carter L. 10 steps to completely overcome vaginismus. 2004. Available at: help@vaginismus.com

Goodwin AR, Agronin ME. *A Woman's Guide to Overcoming Sexual Fear and Pain*. Oakland, Calif: New Harbinger Publications; 1997.

Katz D, Tabisel RL. *Private Pain: Understanding Vaginismus and Dyspareunia*. Winnipeg, Canada: Kromar Printing Ltd; 2002. Available at: www.womentc.com.

Berman J, Berman L. *For Women Only.* New York: Henry Holt & Company; 2001.

References

Bassaly R, Tidwell N, Bertolino S, Hoyte L, Downes K, Hart S. Myofascial pain and pelvic floor dysfunction in patients with interstitial cystitis. Int Urogynecol J. 2011 Apr;22(4):413-8.

Bason R, Althof S, Davis S, et al. Summary of the recommendations on sexual dysfunctions in women. *J Sex Med.* 2004;1:24-34.

Binik YM. The DSM diagnostic criteria for vaginismus. Arch Sex Behav 2010:39;278-291.

Borg C, Peters ML, Weijmar Schultz W, and de Jong PJ. Vaginismus: Heightened harm avoidance and pain catastrophizing cognitions. J Sex Med Article first published online: 24 OCT 2011 DOI: 10.1111/j.1743-6109.2011.02535.x

Constantine ML, Pauls RN, Rogers RR, Rockwood TH. Validation of a single summary score for the Prolapse/Incontinence Sexual Questionnaire-IUGA revised (PISQ-IR). Int Urogynecol J. 2017 Dec;28(12):1901-1907.

Frederick, D. A., Lever, J., Gillespie, B. J., & Garcia, J. R. What keeps passion alive? Sexual satisfaction is associated with sexual communication, mood setting, sexual variety, oral sex, orgasm, and sex frequency in a national US study. The Journal of Sex Research, 54(2), 186-201. 2017.

Haefner HK, et al. The vulvodynia guideline. *J Low Genit Tract Dis.* 2005;9:40-51.

Harish T, Krishna Prasad M, Murthy P, Successful management of vaginismus: An eclectic approach. Indian J Psychiatry. 2012 Oct-Dec; 54(4): 391–392.

Lieblum SR, et al. The treatment of vaginismus: success and failure. In: Lieblum SR, Rosen RC, eds. *Principles and Practice of Sex Therapy: Update for the 1990s.* NY: Guilford Press; 1989.

Lue TF, Giuliano F, Montorsi F, et al. Recommendations for women's sexual dysfunction. *J Sex Med.* 2004;1:6.

Lucas N, Macaskill P, Irwig L, Moran R, Bogduk N. Reliability of Physical Examination for Diagnosis of Myofascial Trigger Points. A Systematic Review of the Literature Clin J Pain 2009;25:80–89

Mayer TG, Neblett R, Cohen H, Howard KJ, Hee Choi Y, et al. The Development and Psychometric Validation of the Central Sensitization Inventory (CSI). Pain Pract. 2012 Apr; 12(4): 276–285.

Reissing ED, Bibik YM, Khalife S, et al. Vaginal spasm, pain, and behavior: an empirical investigation of the diagnosis of vaginismus. *Arch Sex Behav.* 2004;33:5-17.

Rogers RG, et al. An International Urogynecological Association (IUGA)/International Continence Society (ICS) joint report on the terminology for the assessment of sexual health of women with pelvic floor dysfunction, Neurourology and Urodynamics. 2018;37:1220–1240.

Silverstein JL. Origins of psychogenic vaginismus. *Psychother Psychosom.* 1989;52:197-204.

Simon, J. A., Davis, S. R., Althof, S. E., Chedraui, P., Clayton, A. H., Kingsberg, S. A., ... & Wolfman, W. Sexual well-being after menopause: An International Menopause Society White Paper. *Climacteric*, 1-13. 2018.

Souza MDCB, Gusmão MCG, Antunes RA, Souza MM, Rito ALS, Lira P, Mancebo ACA, Tamm MA, Panaino TR, Bahia MJ. Vaginismus in Assisted Reproductive Technology Centers: an invisible population in need of care. JBRA Assist Reprod. 2018 Mar 1;22(1):35-41

Spitznagle TM, Robinson CM. Myofascial pelvic pain. Obstet Gynecol Clin North Am. 2014 Sep;41(3):409-32

Van der Velde J. Laan E, Everaerd W. Vaginismus, a component of a general defensive reaction. An investigation of pelvic floor muscle activity during exposure to emotion-inducing film excerpts in women with and without vaginismus. *Int Urogynecol J* 2001;12:328-331.