

Female sexuality and chronic pelvic pain

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Introduction

Female sexuality and chronic pelvic pain syndrome are both complex biopsychosocial phenomena which are linked through anatomical and functional closeness. The interaction can be principally in both directions: sexual dysfunction can lead to pain and pain can lead or contribute to sexual dysfunction.

To understand this interaction in the individual patient it is necessary to be aware of the characteristics of CPP on one hand and Female Sexual Function and Dysfunction on the other hand.

Definition of CPP

Chronic pelvic pain is defined as pain, which can be cyclic, acyclic, intermittent or continuous of at least 6 months duration located in the lower abdomen and pelvic region that leads to suffering and deterioration of the quality of life of the patient

Chronic pelvic pain can either be a symptom for an underlying disease which has led to tissue or nerve damage or the chronic pain can become a disease of its own without being the sign for another pathology. This ambiguity or double face of CPP is the specific clinical challenge of this disorder which is even more pronounced by the fact that there is a continuum between the CPP as a sign for something else and CPP as a disease of its own.

Epidemiology of CPP

In the largest metaanalysis comprising 178 studies and 450 000 women the authors selected studies of higher

methodological quality and subdivided the CPP patients into 3 groups: a) Dysmenorrhea with a prevalence of 17-81%, Dyspareunia with a prevalence of 8-22%, non cyclic chronic pain 2-24%. This large variance in results shows the methodological difficulties present in investigating a clinical condition which cannot be measured by objective parameters but is defined by patient self reporting. In the anglosaxon literature it is assumed that 15% of the women are suffering from chronic pelvic pain and that in 10% of all gynecologic consultations chronic pelvic pain is the main issue. Matthias investigated women with non cyclic lower abdominal pain. He found a prevalence of 14,7% among women between 18 to 50 years of age. In 61% of these women the cause for the complaint was "unclear".

The etiopathogenesis of chronic pelvic pain

- 3 pathways of pain formation can be distinguished
- Chronic pelvic pain as the result of tissue damage, which activates C fibers to transmit pain signals to the brain centers (Pathology of pelvic organs)
Ex: Endometriosis, Chronic pelvic inflammatory disease, musculoskeletal diseases, chronic inflammatory bowel diseases, chronic urological disorders
 - Chronic pain as a result of damage to the neuroanatomical structures transmitting pain signals (Neuropathic disorder)
Ex.: Lesions of compression of parts of the pelvic plexus, nervus hypogastricus, nervus pelvici etc.
 - Chronic pain as a result of an altered central nervous processing of bodily signals leading to a distorted pain perception (Somatization)
Ex: Depression, Somatoform Disorder, Posttraumatic Stress Syndrome, Precendent sexual abuse
 - Chronic pelvic pain as the result of a complex interaction between different pathways
Ex: Colon irritabile, Interstitial cystitis, Pelvic varicosis

Definition of female sexual function and dysfunction

A woman's sexual experience or response can either be described along the linear model of Masters and Johnson differentiating between the different phases of desire, arousal, orgasm and resolution or by the circular model of Basson et al in which different motives for initiating sexual activity like emotional closeness and pleasing a partner contributing to responsiveness to sexual stimuli may create a state of arousal without previous spontaneous desire and may lead to a behavioral sequence that leads from arousal to increased desire and intensified arousal, emotional satisfaction with orgasm or without orgasm.

Sexual dysfunction is described in DSM IV as "disturbances in sexual desire and/or the psychophysiological changes that characterize the sexual response cycle and cause marked distress and interpersonal difficulties. The classification of dysfunctions follows until now more the linear model and comprises the following entities:

- Sexual desire disorder (Hypoactive sexual desire disorder, Sexual aversion disorder)
- Sexual arousal disorder
- Orgasmic disorder
- Sexual pain disorder (Vaginism, Dyspareunia)
- Other sexual pain disorders (non-coital).

Frequently there is comorbidity of different dysfunctions like dyspareunia and arousal disorder and sexual desire disorder or comorbidity between desire and arousal disorder.

Epidemiology of female sexual dysfunction

Different studies show a highly varied prevalence of female sexual dysfunction. High prevalence rates were reported in the 1990 by Laumann with 43% of women reporting at least one type of sexual dysfunction. In this study it was found that between 27-32% of women aged 18-59 who had been sexually active over the past year reported a lack of interest in sex. Although different assessment tools have been employed and in differing formats (e.g., face to face interview versus questionnaire versus computer assisted interviewing), in general these studies find convergence on the frequency of reported low desire in women to be approximately 20-30%

The prevalence of female sexual arousal disorder shows a range between 10.9% and 31.2%.

Reported figures for prevalence of dyspareunia suffer from underreporting and vary widely according to the definition used, population sampled, and method of ascertainment. In the literature there are prevalence rates ra-

nign from 1.5% among women in a private gynaecologic practice up to 60% among university alumni and 70% in a referral center for vulvovaginal disorders.

The etiopathogenesis of female sexual dysfunction

Female sexual dysfunction is the result of an interaction of medical, endocrine, psychological, relational and sociocultural factors.

Medical factors: Almost all physical diseases may have an impact on sexual function either by direct damage to genital organ structure or by indirect effects on the neurovascular and neuromuscular elements of the sexual physiological response. A large number of drugs interferes with sexual function via neurotransmitter in central and peripheral sexual response patterns.

Endocrine factors: Hypothyroidism, Diabetes, Hyperprolactinemia, postpartum period, Menopause, oral contraceptives may interfere with sexual function

Psychological factors: Sexuality aversive education, early life experiences like neglect or abuse, events during adolescents, performance anxiety abuse etc.

Relational factors: Routine and habituation, conflicts, discrepancy of needs among the partners, non-communication, emotional dissatisfaction, third party involvement etc.

Sociocultural factors: Norms and myths about male and female sexuality.

Risk factors for dyspareunia

A systematic review of 19 controlled studies involving 18,601 women evaluated 14 risk factors for dyspareunia. Peri/post-menopausal age group, anxiety, depression, and history of sexual assault or pelvic inflammatory disease were the only statistically significant risk factors, but the quality of the data was limited.

The interrelationship between chronic pelvic pain and female sexual function or dysfunction

The predominant emotional experience of sexual activity is positive, pleasurable, exciting, relaxing, with physiological reactions of increased blood flow to the genitals, contractions and relaxation of pelvic floor muscles; On a cognitive level the experience is rewarding and thus reinforcing the behavior with a type of positive feedback.

The subjective experience of pelvic pain is on an emotional level negative, unpleasant, frightening leading to defensive physiological reactions with vasoconstriction,

muscular tension in the abdomino-pelvic region; on a cognitive level the experience is aversive leading to avoidant behavior and negative feedback loops.

In women with chronic pelvic pain the genital and pelvic organs are involved in this antagonism between pleasure and pain. This interaction can produce different clinical pictures

a) There is a common psychophysiological pathway which contributes to pain syndrome and sexual dysfunction. In these patients the predominant feature is that signals from the body are strongly modified by central nervous processing patterns involving sympathetic and parasympathetic pathways leading to altered perception and/or efferent pathways. These patients suffer from combined psychophysiological dysregulation which manifests itself in dysfunctional syndromes of the intestine, the bladder and the sexual physiology

Clinical examples are:

- Somatoform disorder
- Colon irritable
- Interstitial cystitis
- Depression with predominant physical symptoms

b) The sexual dysfunction is a main contributing factor to chronic pelvic pain. Traumatic and painful sexual experiences induce neurovascular and neuromuscular reactions which lead to an increase in inhibitory and defensive pathways from the brain to the pelvic sympathetic and parasympathetic plexus involved in sexual physiology

Clinical examples are:

- Sexual traumatization and sexual violence
- Lifelong vaginism
- Vestibulodynia

c) The chronic pelvic pain is the main contributing factor to sexual dysfunction. Structural defects interfere with the physiological pathways of the sexual response cycle.

- Endometriosis
- PID
- Tumours etc.

d) Chronic pelvic pain is one factor in a multifactorial pathogenesis of FSD. In these patients it is not the direct impact of the pelvic pathology but other conditioning factors play an important role

- couple conflicts or partner behavior,
- coexisting affective disorder,
- metabolic disorders,
- body image disturbances

e) Comorbidities of CPP and FSD as independent clinical entities

Patients with preexisting sexual dysfunction independent of their chronic pelvic pain syndrome with little interaction between the different clinical conditions.

How to manage sexual complaints and dysfunctions in women with chronic pelvic pain

The diagnostic workup goes along 3 axes

Axis 1: Sexual Dysfunction.

The physician should explore the individual profile of the sexual dysfunction. Which elements of the sexual activity are experienced as problematic by the patient? How do the different elements interact with each other? What about pain? When does the pain start? Where is the pain localized?

Was there a time when the patient did not experience any sexual problem? When was that? How was her sexual life before the chronic pain started?

This will lead to a descriptive diagnosis indicating which type of sexual problem the patient is suffering from, whether the problem is longstanding and independent of the CPP or is directly or indirectly related to the chronic pain.

Axis 2: Chronic pelvic pain.

The diagnostic workup leads to a differentiation of the different pathogenetic groups: Disease of pelvic organs, neuropathic disorder, somatization.

Axis 3: Type of interaction of Axis 1 and Axis 2 disorder.

The physician tries to integrate the information obtained about Axis 1 and Axis 2 disorder to classify the patient according to the above mentioned 5 categories. The therapeutic plan is based on the individual profile of the patient regarding the etiopathogenesis of CPP, of FSD and the interaction between both.

The principal elements of treatment are:

- Surgical or drug treatment of diseases of the pelvic organs.
 - This treatment follows the guidelines given for the specific disease found with the patient (cave possible side effects on sexual function)
- Treatment of the chronic pain as a disease of its own
 - Surgical, analgetic drugs, antidepressants, hormones, antihormones (cave side effects on sexual function)
- Psychotherapeutic treatment
 - Cognitive behavioral treatment
 - Relaxation
- Sex Therapy
 - Counselling
 - Local hormonal treatment
 - Individual and couple sex therapy.

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