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Geliş Tarihi: 16.03.2018
Kabul Tarihi: 26.03.2018

Chronic Pelvic Pain in the Female – Diagnosis and Management According to the Integral Theory

Kadınlarda Kronik Pelvik Ağrı-İntegral Teoriye Göre Tanı ve Yönetim

Abstract

The Integral Theory states that chronic pelvic pain (CPP), bladder & bowel dysfunctions occur in predictable groupings; that these symptoms are associated with loose uterosacral (USL)/cardinal (CL) ligaments. It follows from this that prolapse and symptoms and are all potentially curable by shortening and reinforcing these ligaments.

Keywords: Chronic pelvic pain; urge; nocturia; fecal incontinence; Integral Theory System.

Öz

İntegral Teori kronik pelvik ağrı, mesane ve barsak disfonksiyonlarının tahmin edilebilen gruplandırılarda oluştuğunu ve bu semptomların gevşek uterosacral/cardinal ligamanlarla ilişkili olduğunu vurgular. Buradan hareketle prolapsus ve semptomların hepsi bu ligamanları kısaltarak ve güçlendirerek potansiyel olarak tedavi edilebilirler.

Anahtar Kelimeler: Kronik pelvik ağrı, ani işeme hissi, fekal inkontinans, İntegral Teori Sistemi

Introduction

Chronic pelvic pain (CPP) is seen in 19% of adult Europeans (1). Possibly, the incidence may be higher in older woman. In a group of women (mean age 70 years) treated for uterine/apical prolapse, 194/611 (32%) had chronic pelvic pain (CPP) (2). CPP is strongly associated with bladder & bowel symptoms (3). Besides, up to 45% of patients with CPP had reduced work productivity (4). Hence, health costs to the community are significant.

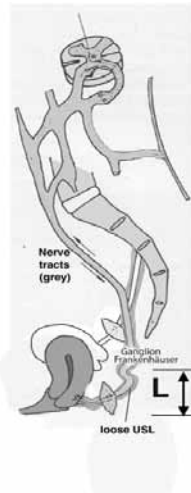


Fig 1 Pathogenesis of chronic pelvic pain

The Ganglion of Frankenhauser and the Sacral Plexus are supported by uterosacral ligaments (USL) at their uterine end. 'L' indicates ligament laxity as per Gordon. The posterior directional forces are weakened and cannot stretch the USLs sufficiently to support the nerves. These may be stimulated by gravity or the prolapse itself to fire off and be perceived as pain by the cortex.

Excluding known causes such as endometriosis, infection, malignancy etc., the pathogenesis of chronic pelvic pain is said to be unknown (5). Furthermore, CPP is considered incurable by learned societies (5) which hypothesize that there is both peripheral and central hypersensitization to pain. Peripheral hypersensitization describes augmented sensory pain input from the peripheral nervous system. Central hypersensitization describes a predisposition to dysfunctional central regulation of the sensory input. The main treatments available at present include counseling, psychotherapy, physical therapy, medications, psychosomatic therapy, laparoscopic uterine nerve ablation, presacral neurectomy and hysterectomy (with or without removal of the ovaries). (6).

The aim of this Mini Review is to introduce the readers of CEJU to the Integral Theory System for diagnosis and management of chronic pelvic pain. According to the Theory, this pain originates from the inability of lax uterosacral ligaments to support the Frankenhauser ganglia and Sacral Nerve plexuses (7,8). These fire off to cause CPP.

The 1st and most important characteristic of this type of CPP in the female is the association with other symptoms such as increased residual urine, obstructive defecation syndrome, nocturia, stress urinary incontinence, frequency, abnormal bladder emptying, urge incontinence which all known as the “Pescatori Iceberg” (9).

The 2nd important characteristic of this type of CPP is that the other symptoms, lie ‘below the surface’. However, the clinician must search for these with specific questions. All these symptoms are simultaneously cured by CL/USL ligament repair.

In a recent study of 611 patients treated with tissue fixation system (TFS) repair of the cardinal and uterosacral for uterine/apical prolapse (2), 77% reported cure of their CPP along with cure of OAB and bowel symptoms. Other surgeons have reported similar cure rates, following repair of cardinal and uterosacral ligaments: Haverfield (9) 90%, Inoue (10) 93%, Goeschen (11) 81% Richardson (12) 86% Caliskan (13) 83%.

It is a fundamental canon of the Theory, that patients with major symptoms and minimal prolapse may also be cured by applying the same sling operations used for major prolapse (2).

The 3rd characteristic of this type of CPP is that when cure occurs, it is almost invariably the day after CL/USL ligament repair (15).

Pathogenesis- anatomical pathway to chronic pelvic pain

Fundamental to the whole Integral Theory’s concept of pelvic pain pathogenesis is ligament elongation and weakening mainly from childbirth, age and menopause (16).

Collagen depolymerizes prior to labour to lose 95% of its strength. This allows the cervical ring, ligaments and vagina to stretch considerably during birthing. At full cervical dilatation (10cm), ligaments stretch, are pushed laterally and may remain stretched postpartum. Vaginal attachments may rupture. The end result may be prolapse and bladder/bowel dysfunction.

The role of USLs in producing chronic pelvic pain was described in detail by Heinrich Martius in 1938 (7) and re-discovered independently by Petros in 1996 (8).

Chronic pelvic pain is perceived by the patients in the various nerve distributions, T12-L1, S 2-4, lower abdomen, groin, lower sacrum (8), introitus (17), paraurethral, bladder (interstitial cystitis) (17), deep dyspareunia (8). Inability of the weakened muscles to tension the uterosacral ligaments may cause unsupported nerve plexuses within the USLs to fire off, fig 1. Objective proof of USLs as the pathway to chronic pelvic pain origin was obtained by two different ‘simulated operations’. These mechanically support either pubourethral ligaments anteriorly or uterosacral ligaments posteriorly digitally or by some other means (forceps, speculum, tampon etc.).

1. Relief of pelvic pain and suburethral tenderness by insertion of the lower part of a bivalve speculum to support the posterior fornix .

2. Local anesthetic injection into the cervical part of the USLs (17) .

Diagnosis of ligament cause of CPP- the Pictorial Algorithm

The relationship between ligament damage and symptoms is summarized in the diagnostic pictorial algorithm (18). The Algorithm relates the damaged ligaments to symptoms. Thus a symptom can indicate which ligaments are damaged. For example, urinary stress incontinence indicates it is PUL which is damaged, pain and nocturia USL damage and so on. The presumptive ligament damage based on symptoms, is confirmed by vaginal examination: each of the damaged ligaments has specific anatomical criteria (18).

NOTE 1 Major symptoms may occur with minimal ligament damage.

NOTE 2 An isolated symptom of CPP is unlikely to be caused by USL looseness.

Non-surgical management according to the Integral Theory. Squatting based Pelvic floor exercises are used to strengthen the 3 directional pelvic floor muscles and the ligaments against which they contract, pubourethral and uterosacral/cardinal ligaments. In a recent review (19), Skilling detailed time efficient pelvic floor rehabilitation exercises. These ranged from adopting a 'squatting culture' such as squatting (instead of bending) to pick something up from the floor; doing as many household tasks as possible in the squatting position; sitting on a fitball instead of a chair; then, structured exercises such as situps, downward pushing while supporting the pubourethral ligament digitally, electrical stimulation with a probe inserted into the posterior fornix of vagina.

Surgery "Repair the structure (ligament) and you will restore the function"(Integral Theory)

Surgery is indicative for curing of symptoms (stress urinary incontinence, frequency, abnormal emptying, obstructive defecation, nocturia, frequency, pelvic pain) even when prolapse is minor . Chronic pelvic pain occurs in concert with other symptoms. Obvious causes such as endometriosis, infection, carcinoma are excluded.

The surgical cure, whatever the method used is simple; the uterosacral ligaments are shortened and reinforced. For long-term effect, thin polypropylene tapes precisely inserted along the line of the damaged ligament (8-14) are recommended.

Discussion

Psychological disturbances -Are these primary or secondary to the pain? This was discussed recently with reference to selected case studies (20), though clearly, selected case studies cannot give a valid answer to this question. However, the major almost immediate improvement in the psychological state reported in these case studies is worthy of further investigation in patients with this condition undergoing posterior sling surgery.

Peripheral and central hypersensitization. Our results do not support these hypotheses. Cure, when it occurred, was almost invariably immediate, usually by the following day (15).

Cure of co-occurring bladder and bowel symptoms

All surgical results which repair uterosacral ligaments, whatever the technique used, confirm that CPP co-occurs with bladder and bowel symptoms and these are usually, but not always, cured at the same time as cure of CPP (9-15).

Which operation? The 1996 operations consisted of plication of the uterosacral ligaments with polyglactin (Vicryl®) and were performed mainly under local anaesthesia (8). This operation works best with younger women. Though initial results indicated an 85% cure/improvement rate, this deteriorated markedly with time. (8). Hence the introduction of posterior tapes to better reinforce the ligaments.

Conclusions and future directions Chronic pelvic pain co-occurs in predictable groupings with pelvic organ prolapse, bladder and bowel symptoms. These conditions can be cured/improved with minimally invasive ligament repair methods which use thin strips of propylene tape (2). Cure of CPP even in 70 year old women (2) indicates that this methodology could go a long way towards helping the problem of the aged.

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