Musculoskeletal Approach to Pelvic Pain

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KEYWORDS

- Musculoskeletal • Pelvic pain • Sacroiliac joint • Pubic symphysis
- Bone stress injury • Hip pain • Greater trochanteric pain syndrome

KEY POINTS

- Visceral and somatic causes of pelvic pain are often inter-related, and a musculoskeletal examination should always be considered for the successful diagnosis and treatment of pelvic pain.
- For the diverse etiologies of hip pain, there are many unique considerations for the diagnosis and treatment of these various disorders.
- Pelvic pain is often multidimensional due to the overlap between lumbo-hip-pelvic diagnoses and may require a multidisciplinary approach to evaluation and management.

INTRODUCTION

Etiologies of pelvic pain are vast, and differentiation between visceral and somatic sources of pelvic pain can be complex. Accurate diagnosis and successful treatment of musculoskeletal pelvic pain require an understanding of the possible effect of visceral pathology on somatic pain as well as an appreciation of the lumbo-hip-pelvic-pelvic floor interconnection to musculoskeletal pelvic pain. For these reasons, pelvic pain is often multidimensional and may require a multidisciplinary approach to evaluation and management.

Visceral pelvic pain may be related to urologic, gynecologic, obstetric, and gastroenterologic processes, which can have secondary musculoskeletal effects through the viscerosomatic reflex. Interstitial cystitis and irritable bowel syndrome have been associated with pelvic floor dysfunction, through increased pelvic floor muscular resting state and associated pain.[1] Endometriosis has been implicated in cyclic sciatic radiculopathy,[2,3] and pregnancy may cause pelvic girdle pain (PGP) through the

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hormonal, weight, and center of gravity change effects on pelvic joint stability and function. Given the complex overlap between visceral and somatic pelvic pain, the American College of Obstetricians and Gynecologists recommends musculoskeletal causes of pain be evaluated before laparoscopy or hysterectomy for chronic pelvic pain.[4]

This article focuses on the evaluation of musculoskeletal pelvic pain[4] as well as the relationship between disorders of the bony pelvis to hip and lumbar pathology. European guidelines have proposed that musculoskeletal pelvic pain be termed, PGP, for exclusion of gynecologic and/or urologic disorders while maintaining consistency of terminology[4] (**Box 1**).

SACROILIAC JOINT PAIN

Sacroiliac joint (SIJ) pain results when the joint is placed under stress and is often diagnosed in the setting of posterior pelvic pain. Pain can be a result, however, of intra-articular SIJ pain, ligamentous pain, associated muscular pain, or a combination of these factors.

Anatomy

The SIJ, a true synovial joint in the inferior portion, is surrounded by a capsule anteriorly and posteriorly and is reinforced by the anterior and posterior sacroiliac ligaments (**Fig. 1**). The dorsal longitudinal SIJ ligament crosses the SIJ to attach to the dorsal sacrum and ilium.[5] It contains nociceptors and proprioceptors and has been implicated in posterior pelvic pain because it absorbs forces from the SIJ and hip. Broad lumbar and sacral innervation contributes to the varied clinical presentations of SIJ pain.

- SIJ stability: relies on both form and force closure[6,7]
  - Form closure refers to passive stability achieved by the interlocking mechanism of articular grooves and ridges of the SIJ, which is more pronounced in men.
  - Force closure is achieved by intrinsic and extrinsic SIJ ligament tension, in addition to pelvic, hip, and lumbar muscular contraction, which further stabilizes the SIJ.

Clinical Presentation

Given the vast innervation to the SIJ, symptoms are diverse and may vary over time. SIJ pain may present with unilateral, bilateral or alternating symptoms.

Box 1
European guidelines for pelvic girdle pain

Occurs most frequently in relation to pregnancy, trauma and/or arthritis.

Pain is located between the posterior iliac crest and gluteal fold, particularly in the SIJ region.

Pain may occur in conjunction with or separately in the pubic symphysis.

Pain may radiate to the posterior thigh.

Standing, walking, and sitting tolerance is diminished.

Pain or functional limitations with PGP must be reproducible by specific physical examination tests.

Lumbar causes must be ruled out prior to diagnosis of PGP.

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