

Pregnancy - Related Pelvic Girdle Pain

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Pelvic girdle pain has a high incidence during pregnancy. To increase the awareness of the health professionals, we discussed the etiology, presentation, risk factors, risk of recurrence, differential diagnosis and multidisciplinary management of this condition.

Keywords: Pelvic girdle pain, Pregnancy

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Introduction

Pelvic girdle pain (PGP) is a condition which causes pain in one or more joints of the pelvis and difficulty walking and generally arises in relation to pregnancy but can also occur in women who are not pregnant and men too, sometimes as a result of injury or trauma. It is a common and disabling problem. The prevalence of pregnant women suffering from PGP is about 20%. During pregnancy, 25% of women experience serious pelvic pain, and 8% are severely disabled.^{1,2}

Some confusion arises from the various nomenclature used to describe what is likely to be a group of conditions causing pregnancy-related pelvic girdle pain (PPGP). Many terms have been used for PPGP and they are described on the basis of: causative hypotheses as; pelvic joint arthropathy, relaxation, insufficiency, instability, presenting symptoms as; pelvic pain, and/or low-back pain, pelvic joint pain, related topography as; posterior pelvic pain, osteitis pubis, Symphysis Pubis Dysfunction (SPD), low-back pain (LBP).²⁻⁴

Clinical Presentation

PPGP is experienced between the posterior iliac crest and the gluteal fold, particularly in the vicinity of the sacroiliac joints (SIJ) and may radiate to the posterior thigh and can also occur in conjunction with/or separately in the symphysis. A precise localization of the pain is often impossible and may also change during the course of the pregnancy. Functionally,

women with PPGP often complain of increased pain when walking.² The severity of symptoms varies from mild discomfort to severely debilitating pain. The pain is worst during weight bearing activities (particularly those that involve lifting 1 leg). Apart from pain, alteration of gait patterns, tenderness to deep palpation of the suprapubic and sacroiliac area and signs of local inflammation (erythema, edema, warmth) may also exist. The endurance capacity for standing, walking, and sitting is diminished.⁵

The onset of PPGP may be insidious or sudden and could occur between the ends of the first trimester to the first month post delivery, including the labor stage. A general consensus exists regarding a peak of symptoms closer to the third trimester between the 24th and 36th weeks of pregnancy. PPGP is classified into 5 types based on pain localization (Table 1).^{6,7}

Etiology of PGP

The exact mechanisms that lead to the development of PPGP remain uncertain. The cause of PPGP seems to be multifactorial. Hormonal, biomechanical, traumatic, metabolic, genetic and degenerative factors all have etiologic implications.

Hormones relaxin and progesterone in combination with other hormones, affects the laxity of ligaments of the pelvic girdle as well as ligaments in the rest of the body. As a result the muscles around the lower back and pelvis have to work harder to support the body and in some cases these muscles over work resulting in pain.⁸ However, Marnach et al. have recently reported that the increase in joint laxity during pregnancy does not correlate with increased maternal serum levels of estradiol, progesterone or relaxin.⁹

The SIJ and the symphysis pubis joint are supported by strong ligaments and over 35 muscles which attach at various points to the pelvis and spine. The ability to effectively transfer load through joints is a dynamic process and depends on many factors. The joint reaction force is modified by gravity, the shape of the articular surfaces, the actual joint position, proprioceptive muscle reflexes, the level of muscle contrac-

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Table 1: PPGP is classified into 5 types based on pain localization

Type 1: Pelvic girdle syndrome	anterior and posterior pelvic girdle, symphysis pubis and bilateral SIJ
Type 2: Double-sided sacroiliac syndrome	posterior pelvic girdle and bilateral SIJ
Type 3: Single-sided sacroiliac syndrome	posterior pelvic girdle and unilateral SIJ
Type 4: Symphysiylolysis	anterior pelvic girdle and pubic symphysis
Type 5: Miscellaneous	inconsistent findings of the pelvic girdle

SIJ: Sacroiliac joint

tions and increased ligament tension, which will determine the level of stiffness of the joint. Static and dynamic stability throughout the body is achieved when the active, passive and neuromotor control systems work together to transfer load. During pregnancy the female body is exposed to certain factors that have an impact on the dynamic stability of the pelvis. Progressive lordosis and the increased mobility of the sacroiliac, sacrococcygeal and pubic joints are physiological adaptation of musculoskeletal system to pregnancy. The biomechanical theory and mechanical theories based on body habitus and lumbar spine stance, fetal size and weight affecting the pelvic floor and the abdominal muscles and the widening of the symphysis pubis joint (≥ 10 mm) have been proven incompatible with all the cases.^{10,11} The role of genetics is still largely unknown, and current knowledge is based on epidemiological indications between first degree relatives.

Risk factors

Risk factors for developing PGP during pregnancy are most probably those of strenuous work (twisting and bending the back several times per hour), a history of previous LBP, PPGP and trauma to the pelvis. There is agreement that non risk factors are: contraceptive pills, time interval since last pregnancy, smoking, epidural anesthesia, maternal ethnicity, body mass index, number of previous pregnancies, bone density, fetal weight and age and most probably age.^{12,13}

Making the diagnosis

European guidelines for the prevention of low back pain and for the diagnosis and treatment of acute and chronic non-specific low back pain have been published previously.⁵ The most important issue is to be aware of the possibility of PPGP in pregnancy and to make an early diagnosis. A tendency to dismiss the symptoms as a "normal consequence of the body adjusting to its new shape" is a common mistake, and costly for the patient in terms of continuing pain and disability. Clinical awareness of the PPGP syndrome appears to be increasing because of increased public awareness and the interaction of scientists from different medical specialties. A thorough medical history, physical examination and appropriate laboratory tests should always be performed to successfully reach the diagnosis of PPGP. For differential diagnosis, a complete blood count, biochemistry and urine analysis should be performed.¹⁴

History combined with the localization of the pain, with the addition of pain referral maps can differentiate lower-back pain syndromes, sciatica, visceral or vascular origin syndromes from PPGP. Earlier studies were more focused on deep palpation and radiologic findings, while recently specialist physiotherapists use a range of specific pain provocative tests (P4/thigh thrust, Patrick's Faber, Gaenslen's test, and modified Trendelenburg test) and pain palpation tests (long dorsal ligament test and palpation of the symphysis) to assist the diagnosis. As a functional test, the active straight leg raise (ASLR) test is recommended. The diagnosis of PGP can be reached after exclusion of lumbar causes.^{15,16}

According to the recent recommendations of the European PPGP research group, use of conventional radiography, CT scans and scintigraphy are usually limited to postpartum females, because of the hazard of exposing the fetus to ionizing radiation. A magnetic resonance imaging (MRI) scan is suggested for the differential diagnosis of PPGP in all its stages offering additional advantages of increased resolution and its superiority in allowing visualization of soft tissue and marrow reactions.⁵

Differential diagnosis

As this syndrome expands to a wide field of anatomically related medical specialties, a multidisciplinary approach and consultation may be needed for the differential diagnosis from visceral pathologies of the pelvis, lower-back pain syndromes (lumbar disc lesion/prolapsed, radiculopathies, spondylolisthesis, rheumatism, sciatica, spinal stenosis or lumbar spine arthritis), bone or soft tissue or urinary tract infections, rupture of symphysis pubis, and bone or soft tissue tumors, femoral vein thrombosis, obstetric complications (preterm labor, abruptio, round ligament pain, chorioamnionitis).^{17,18}

Screening the general pregnant patient population

A scoring system is described to guide clinicians in screening the general pregnant patient population and included five essential symptoms: pain of the pubic symphysis on walking, while standing on one leg, while climbing stairs, or while turning over in bed, as well as a history of damage to the pelvis or the lumbosacral area. Pain with rolling over in bed, climbing stairs and getting out of the bath are highly suggestive of the condition.^{19,20}

Management

A guideline on PGP was developed by “Working Group 4” within the framework of the COST ACTION B13 “Low back pain: guidelines for its management”, issued by the European Commission, Research Directorate-General, Department of Policy, Coordination and Strategy.²¹ Most patients can be managed as outpatients; a few patients require inpatient admission for further investigations and management. There is no hard and fast cure for PPGP. Adequate information and reassurance of the patient, bed rest and symptomatic care appear to be the mainstay of PPGP therapy, at initial stages. Management of the PPGP syndrome needs a combined interdisciplinary approach including psychologist, physiotherapist, obstetrician, soft tissue therapist, osteopath and chiropractor with experience and knowledge of managing PPGP. Treating tight overactive muscles using massage or similar techniques, an individually designed programme of exercises to improve the stability of the pelvis, cushions and pillows, local application of heat and/or cold early patient education, acupuncture, walking aids and/or wheelchairs was recently suggested on the basis of the potential beneficial psycho physiological effect at least to a subgroup of the PPGP population and the apparent safety of these noninvasive approaches. Water gymnastics and pelvic tilt exercises with avoidance of maladaptive movements such as stair climbing, as well as acupuncture has been identified as beneficial. A supportive belt, which is ideally worn at the level of the anterior superior iliac spines, decreases joint laxity.²² Nonsteroidal anti-inflammatory agents contraindicated during pregnancy, can be introduced at this point with good effect.

According to the European guidelines, the surgical option (fusion surgery of one or all three of the pelvic girdle Joints) should be offered as part of a comprehensive management protocol and mostly as an end-stage alternative used by specialist surgeons.²¹

The labor of a woman with established PGP

It is important that the patient’s treating obstetrician and midwife are aware of the problem. During labor, the lithotomy position and abduction of the hips aggravate the condition even if an epidural makes the position pain free. All-four position or lateral positions should be preferred. There is currently no evidence that caesarean section results in a more rapid recovery and any particular advantages to women with established PPGP syndrome, except for those at the worst extreme, whereas the mere positioning for vaginal delivery is impossible. Early induction of labor or elective caesarean section is advocated by a few of the authors in the most severe cases, but these options are still supported by limited evidence.^{18,23} Whether epidural anesthesia (EDA) or spinal anesthesia contribute to post-partum back problems has been debated during the last decade; however, most studies conclude that there is no increased risk for persistent back pain after EDA or spinal anesthesia.^{24,25}

Prognosis

In the majority of cases (up to 93%), PPGP settles and spontaneously disappears after the sixth month postpartum. In the rest of the cases, it persists, acquiring a chronic character.

In general, postpartum pain may be milder than that during pregnancy.^{18,26,27} There is evidence that psychosocial factors influence pain and disability and in particular the transition from acute to chronic pain.²⁸ Factors associated with worse prognosis of PPGP are summarized in Table 2.²⁹

Table 2: Factors associated with worse prognosis of PPGP

High number of simultaneously positive provocation diagnostic tests
Lower index of mobility
Multiparity
Lack of education and/or unskilled work history
Prolonged duration of labor
Age >29 years
Higher pain intensity (VAS score >6)
Onset of pain at early gestation
Combined lumbar and pelvic pain in pregnancy
Localization of pain in more than one of the pelvic joints
Beliefs in improvement associated with depression or anxiety

VAS: Visual analogue scale

Recurrence of PPGP in subsequent pregnancies is common (41% to 77%).³⁰ In the majority of the recorded pregnancy relapses of PPGP, the syndrome reappears in a more severe form. So it may be wise for the woman to wait until her child can walk unaided for another pregnancy. Attention to improving core stability and care with aggravating activities may decrease the severity during future pregnancies.³¹

Hamilelik - Pelvik Kuşak Ağrısı

Pelvik kuşak gebelik sırasında yüksek insidans gösteren bir problemdir. Hekimlerin farkındalığını arttırmak için bu durumun etyoloji, prezantasyon, risk faktörleri, ayırıcı tanı ve multidisipliner tedavisini derledik.

Anahtar Kelimeler: Pelvik kuşak ağrısı, Gebelik

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