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Case Report

Peripartum Pubic Symphysis Diastasis

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Abstract

Background: Under the guidance of normal hormonal changes during pregnancy, physiological widening of the pubic symphysis occurs during spontaneous vaginal delivery. Peripartum pubic symphysis diastasis, an uncommon traumatic disruption of the pubic ligaments, leads to irreversible widening of the pubic symphysis. Characteristic symptoms including pubic pain radiating to the lower back and posterior girdle along with pain upon movement should raise the suspicion of the treating physician to order diagnostic imaging. Non-operative management with a pelvic binder and protected weight bearing has been successful in most cases. No clear consensus for surgical intervention has been established but may be necessary in patients with persistent pain and in cases that also involve the posterior pelvic girdle.

Case Report: In this case report, we present a case of a 31- year-old gravida three, para two who had symptomatic pubic symphysis diastasis after a spontaneous vaginal delivery. The patient was treated conservatively with a well-fitted pelvic binder and adequate analgesia and an ability to ambulate. Six-months postpartum, the patient showed no limitations with activities of daily living and only revealed minimal pain when lying on her side. There was no tenderness to palpation over the SI joint, lower back, or with lateral compression.

Conclusion: With the rarity of occurrences, a multi-center study would be necessary to accurately estimate the incidence of peripartum pubic symphysis diastasis. Although a well-fitted pelvic binder affords the majority of patients with adequate analgesia and an ability to ambulate; prospective, double blinded clinical studies comparing conservative and surgical interventions are needed to discern which patients would more likely benefit from surgical intervention.

Keywords: Pubic Symphysis Diastasis; Prevalence; Risk Factors; Therapy, Pregnancy; Peripartum

Introduction

The pubic symphysis is a midline connection of the right and left pubic rami through ligamentous structures [1]. Under normal circumstances, the joint allows approximately 0.5 to 1mm of motion [1]. During pregnancy, however, changes in estradiol, progesterone, and relax in levels lead to the physiological widening of the symphysis and the sacroiliac joints (SI) [2]. Increasing the diameter of the pelvic outlet is considered necessary for childbirth, with an average normal radiological distance between pubic bodies of 4mm. Peripartum pubic symphysis diastasis is an irreversible traumatic disruption of the ligamentous structures greater than 1cm during the passage of the new born child through the birth canal [3]. Although rare, peripartum pubic diastasis has a reported incidence range of 1 in 300 to 1 in 30,000 deliveries. The present study will describe a patient who presented postpartum with a symptomatic pubic diastasis of 3.2 centimetres after an uneventful vaginal delivery. An overview of pathophysiology, clinical findings, and recommended approaches for diagnosing and treating postpartum pubic diastasis will be discussed.

Case Report

The patient is a 31-year-old gravida 3, para 2 woman who delivered her baby via spontaneous vaginal delivery at 35 weeks and six days of pregnancy, requiring no induction or augmentation. She delivered a vigorous baby vaginally in the occipital-anterior position weighing 3790 grams. During delivery, the mother felt "stretching" of her pelvis that she did not experience with her previous delivery. She also sustained a second-degree perineal laceration, which was repaired without complications after delivery. Four days postpartum, the mother returned to the hospital for increasing lower back pain and severe circumferential pelvic pain when ambulating. AP pelvic x-ray revealed a pubic symphysis diastasis of 3.2 centimetres without widening of her SI joints (Figure 1). A pelvic binder was placed over her greater trochanters, and she was given a prescription for a non-steroidal anti-inflammatory. The patient was allowed to bear weight as tolerated while the pelvic binder was in place. Two weeks following delivery, the patient had significant pain reduction and could ambulate short distances painlessly. Physical examination revealed mild tenderness over the bilateral SI joints and pubic symphysis pain with lateral compression. Repeat films taken in the pelvic binder showed 0.75 centimetres of diastasis. Over the next two months, the patient was instructed to remove the pelvic binder only twice a day for 1-hour intervals to relieve skin pressure and always to wear the binder when out of bed. At her 2-month visit, she had continued lower back and SI pain with prolonged sitting and standing. Physical examination revealed reproducible tenderness to palpation over the SI joint, lower back, and with lateral compression. X-rays showed a decrease in pubic symphysis, widening from 3.2 centimetres to 1.4 centimetres (Figure 2). Using a pelvic binder was then discontinued, and she was allowed to ambulate with no assistive devices. A review at six months showed no limitations with activities of daily living and only revealed minimal pain when lying on her side. There was no tenderness to palpation over the SI joint, lower back, or with lateral compression. X-rays of her AP pelvis displayed a stable separation of the pubic symphysis of 1.4 cm (Figure 3).

Figure 1: Plain AP pelvic X-ray 4 days postpartum, 3.2 cm symphysis widening.

Figure 2: Plain AP pelvic X-ray 2 months postpartum, 0.75 cm symphysis widening.

Figure 3: Plain AP pelvic X-ray 6 months postpartum, 1.48 cm symphysis widening.

Discussion

Peripartum pubic diastasis is a rare clinical entity that was first described in 1932 [2]. They estimated that 1 in 5,000 vaginal deliveries had symptomatic diastasis. Since it was first described, the incidence has been reported from 1in 300 to 1 in 30,000 [2]. Recent retrospective studies have reported similar incidences in the lower range of 1 in 300 to 1 in 600 [1]. Multiple risk factors have been suggested, including a small pelvic outlet, prolonged labour, fast contractions with short intervals, epidural anaesthesia, previous null parity, shoulder dystocia associated with large birth weight, forceps delivery, previous pelvic trauma, and maternal developmental dysplasia of the hip [3,4]. During pregnancy, increased ligamentous laxity occurs throughout the body. Hormonal changes in estradiol, progesterone, and relax in are thought to enable normal vaginal delivery through stretching of the pelvic ligaments [3,4]. There is no known relationship between specific hormonal levels and the amount of physiologic ligamentous laxity [2]. Physiologic ligamentous laxity and peripartum diastasis begin to reverse soon after childbirth and return to normal within 12 weeks [2]. The diagnosis of peripartum pubic diastasis is through clinical evaluation of the patient and can be confirmed by imaging. Acutely, an audible pop or stretching sensation may precede a sudden onset of severe pain and swelling in the region of the pubic symphysis [3,5]. Less acutely, many women will have pain or difficulty ambulating and a waddling wide-based gait [3,6].

Physical examination may reveal a palpable gap at the symphysis. Lateral compression of the iliac crests may cause significant pain and abnormal motion [7]. Pain in the SI joints may be assessed with palpation or a Patrick test (flexion, abduction, and external rotation of the hip) [3,7]. Symptoms and physical exam findings might not be immediately apparent if neuraxial analgesia was used [3,8]. Initial imaging should begin with a pelvic x-ray or an ultrasound to assess the extent of symphysis separation [3,7,9]. A computed tomography (CT) scan of the pelvis should be obtained if any sacral fractures or widening of the SI joint is seen on x-ray as well as to assess for retroperitoneal haemorrhage [3]. There have been reports on the utility of magnetic resonance imaging in assessing minimally displaced symphysis separations in symptomatic patients [3].

Aside from childbirth, pubic symphysis widening is typically seen because of high-energy trauma [1,3,6]. The physiological differences between the traumatic and peripartum causes of pubic symphysis widening are considered as why the treatment between the two differ [3]. In traumatic symphysis disruption, operative treatment is typically indicated in pubic diastasis greater than 2.5cm [3,4]. In contrast, successful conservative management in peripartum pubic diastasis has been reported in pubic diastasis as wide as 9.5cm [3,4]. The management of peripartum pubic diastasis is much less precise than the diagnosis because of the limited clinical incidence and lack of prospective, double-blinded clinical studies comparing conservative and surgical intervention. Nonoperative treatment with a pelvic binder and early-protected weight bearing is the initial treatment of choice [3,4]. Serial radiographs should be obtained to confirm continued pubic congruity without increased widening [3,4]. Conservative treatment has shown mixed outcomes, with some studies showing early symptomatic relief within the first few weeks, while other studies report persistent pain [3,4]. Although there is no consensus, previous investigators have suggested that a symphysis diastasis greater than 4 cm or with no improvement in pain warrants surgical intervention. The most common surgical treatment is anterior fixation [3,4,5]. While many patients who have failed conservative treatment experience rapid improvement in their symptoms with surgical management, the efficacy of the surgical intervention is being questioned since many patients undergoing primary surgical fixation have been shown to experience long-term disability [3,4]. Surgical intervention is also warranted in open pubic symphysis rupture secondary to severe vaginal tearing, significant malreduction of the pelvis, and diastasis with the pelvic binder in place or with posterior pelvic injuries [3]. Surgical intervention is recommended in cases with pubic separation of more than 10 mm combined with the widening of the sacroiliac joints [3,4]. The most extensive study about the management of ensuing pregnancies in women with prior peripartum pubic symphysis diastasis was done by Culligan et al. The review found 20 case reports of pregnancies in women after peripartum pubic symphysis separation had a subsequent pregnancy. Eleven of the 20 women had recurrent pubic diastasis [10].

Conclusion

Risk factors have been suggested; however, they have not been predictive of the occurrence of peripartum pubic symphysis diastasis. High clinical suspicion for peripartum pubic symphysis diastasis should be had when the patient presents with severe radiating pubic pain and difficulty ambulating. Confirmation of pubic widening should be obtained with radiographic imaging of the pelvis. When a well-fitted pelvic binder affords adequate patient analgesia and the ability to ambulate, conservative treatment remains the initial treatment of choice. With the rarity of occurrences, a multi-center study would be necessary to estimate the incidence of peripartum pubic symphysis diastasis accurately. Although a well-fitted pelvic binder affords the majority of patients adequate analgesia and the ability to ambulate, prospective, double-blinded clinical studies comparing conservative and surgical interventions are needed to discern which patients would more likely benefit from surgical intervention.

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