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Case Report

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Challenging Case of Pubic Symphyseal Plating for Pubic Diastasis in a Term Pregnant Patient

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ABSTRACT

Background: The pubic symphysis is classified as a non-synovial joint that normally has a radiographic separation measuring between 4 and 5 millimetres between the superior pubic rami on both the right and left sides. The gap between 2 and 3 mm is widened by the physiological and hormonal changes that occur during pregnancy, leading to a condition called physiological pubic symphysis diastasis. Abnormal widening of the gap leads to pathological conditions of immense clinical importance.

Methods: Pubic symphysis diastasis (PSD) is radiologically diagnosed when a joint widening of more than 10 mm is seen, which is indicative of pathological separation. Separation of more than 25 mm raises suspicion for ligamentous disruption and potential public rupture. PSD is typically discovered as a result of high-energy trauma or obstetric trauma and is most frequently related to anterior-posterior compression (APC) injury, as per the Young and Burgess Classification system.

Results: Unless well managed, PSD during or post-pregnancy can result in persistent recovery, chronic pain, and disability. The degree of joint widening correlates with the extent of ligamentous injury and the requirement for definitive management, ranging from conservative care to surgery.

Conclusion: PSD is a complex pregnancy or injury that needs early detection and proper care. Detection of the severity of diastasis is crucial for the delivery of treatment and enhancement of the mother.

Key-words: Pubic symphysis diastasis (PSD), Pubic Symphyseal Plating, Pubic Diastasis, Pregnant Patient

INTRODUCTION

Excessive separation of the pubic symphysis, which is a joint composed of fibrocartilaginous tissue that links the anterior pelvic region's left and right pubic bones, is known as pubic symphysis diastasis [1]. Normally, this joint has minimal mobility, but pregnancy-related hormonal changes, notably higher levels of relaxin and progesterone, cause physiological dilation in preparation for delivery.

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Excessive separation of the pubic symphysis, which is a joint composed of fibrocartilaginous tissue that links the left and right pubic osseous structures at the front of the pelvic region, is a symptom of pubic symphysis diastasis. The pubic bones in a non-pregnant person are separated by a size of 4 and 5 mm, but they might rise by 2 to 3 mm during the perinatal period. [2] Moreover, the pubic symphysis width has been shown to the measurement increase from 4 mm at 8 weeks of gestation to approximately 7 mm at full term.[3] However, while a mild increase in pubic symphysis width is typical during pregnancy, a separation exceeding 1 cm is considered pathological and can result in pain, pelvic instability, and functional impairment [4].

Complete pubic symphysis separation is thought to occur anywhere between 1 in 300 and 1 in 30,000 births,

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according to published data [5], however, many instances likely go unnoticed. Among the risk factors for PSD are forceps or vacuum-assisted delivery, protracted labor, several pregnancies, first-time pregnant women, maternal age older than 35, and fetal macrosomia. Additionally, conditions such as excessive thigh abduction during delivery, connective tissue disorders, and previous pelvic trauma may contribute to its occurrence. Patients typically present postpartum with severe anterior pelvic pain, Difficulty with ambulation, and, in some cases, urinary retention. Diagnosis is confirmed through imaging, with ultrasound and pelvic radiographs used to assess the extent of separation.

The clinical course of PSD varies. Some cases spontaneously resolve within weeks to months, while others require treatment. Management is primarily conservative, involving pelvic binders, physical therapy, and pain management with NSAIDs or acetaminophen. Severe cases, particularly those with separations >4 cm, may require surgical intervention, including internal fixation with plates and screws. If left untreated or misdiagnosed, PSD can lead to chronic pelvic pain and long-term disability. Pain and instability may also affect nearby musculoskeletal structures, causing compensatory gait abnormalities, sacroiliac joint dysfunction, and secondary musculoskeletal complications.

CASE REPRESENTATION

A 24-year-old healthy female who was in a term pregnancy presented to EMD with an alleged history of a road traffic accident, following which her lower abdomen started hurting. The pain started abruptly, was gradually progressive, and was not associated with any swelling or deformity. On clinical examination, pelvic compression and distraction tests were positive, and tenderness was noted over the pubic symphysis and right hip region without any swelling. Active range of movement at both hip joints was terminally painful. After taking the Obstetrician's opinion and their evaluation, an X-ray of the pelvis with a bilateral hip was taken, which showed pubic symphyseal diastasis with a gap of approximately 2 cm.

The patient was admitted to the department of OBG due to her term pregnancy, and foetal monitoring was done. The patient received conservative treatment through the application of a pelvic binder.

After a week, the patient was taken up for emergency LACS and planned for pubic symphyseal plating. After taking the obstetrician's opinion, the patient underwent ORIF + Pubic symphyseal plating under general anesthesia. The postoperative period was uneventful. Early mobilization was done, and the Patient was hemodynamically stable.

Fig. 1: Pre Op X-Ray of Pelvis with Bilateral Hip Joint Showing Pubic Symphyseal Diastasis

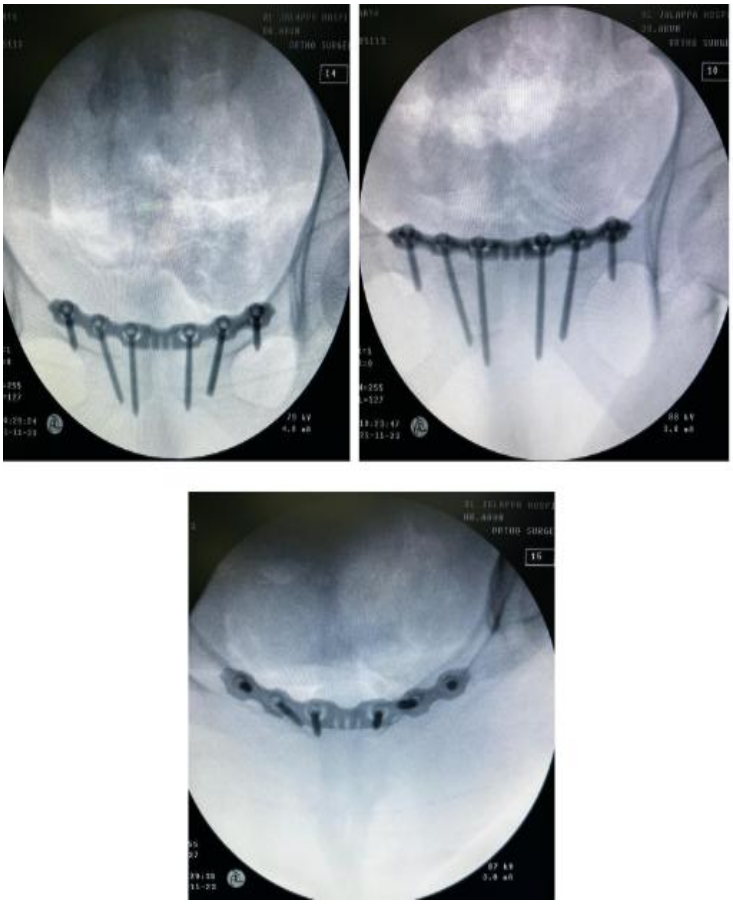

Fig. 2: Intra-Op Images of Orif + Pubic Symphyseal Plating

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DISCUSSION

Pregnancy is a rare and frequently underreported complication of PSD. As a result, it is challenging to explain the linked factors associated with high risk, a complex of symptoms, and a therapeutic algorithm. From the first trimester of pregnancy onward, the pubic symphysis, classified as a secondary cartilaginous joint, begins to relax by 3–7 mm subjected to mechanical stress and the hormonal effects of Progesterone and relaxin hormones. [2] Ultrasonography was used in an investigation that explored the changes in the pubic symphysis throughout the processes of labor and the postpartum period. The findings showed that the symphysis dilated at 59% to 94% of the parturient, depending on the specific location examined. The expansion of the gap varied between 9% and 139% of its original width [3]. As originally suggested by Hagen, a separation exceeding 1 cm post-delivery is generally regarded as pathological and indicative of symphyseal diastasis [4]. However, several studies have indicated that there is no definitive correlation between the extent of separation and the intensity of symptoms. In our case, the subject was a primigravida with a healthy physique and a brief labor duration [4,5]. Jaya Jethra Chawla and colleagues reported a case involving a primigravida who experienced a 5.4 cm separation during labor, accompanied by a distinct cracking sound just before delivery, along with significant low back pain and challenges in leg elevation and hip flexion, which was managed with a pelvic brace [6-9]. Their case was associated with the McRoberts manoeuvre and rapid labor. Additionally, another study linked a history of macrosomia, an extended second stage of labor, and the use of epidural analgesia to pelvic symphysis dysfunction, with shoulder dystocia also being implicated. A study from South Korea [10] listed primiparity and several pregnancies as risk factors, while Graf *et al*. [13] report described a multiparous patient experienced shoulder dystocia, which was addressed using the McRoberts maneuver and supra-symphysial pressure, leading to a 60 mm separation of the symphysis that was effectively managed through open reduction and internal fixation. In a primi-pa who had a history of active athletic activity, Henry discovered a postpartum diastasis of 24 mm. In addition to a sacroiliac belt, they also employed chiropractic procedures like transcutaneous electrical nerve stimulation, application of moist heat, and gentle chiropractic adjustments targeting the sacrum, innominate bones, L4, and L5 have been documented [11]. Numerous studies have detailed surgical interventions for diastasis, which encompass open reduction with internal fixation, external fixation, and the use of local infiltration alongside stabilization of the posterior pelvic ring through minimally invasive techniques. [12–14] Traumatic rupture, ineffective conservative treatment, or persistent or recurrent symptoms following childbirth are all typical indications for surgical therapy. According to Parker *et al*. [17], if the separation measures greater than 3 cm in width, surgical correction should be considered. With the use of a spinal cord stimulator, one case study has also supported neuromodulation [15,19].

CONCLUSIONS

Peripartum women are known to experience pubic diastasis, but infrequently. Even in women who are full-term pregnant, if linked to trauma, a multidisciplinary approach might be used with caution. To prevent difficulties for the mother and fetus, patients should have as little radiation as possible. When treating pubic diastasis in a term pregnant woman, pubic symphysis plating offers great results and is not inherently contradictory.

CONTRIBUTION OF AUTHORS

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Research design- Hariprasad S, Ayush Agrawal
Supervision- Hariprasad S, Nagakumar J.S
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