



## **Antepartum Pubic Symphysis Diastasis -A Diagnostic Challenge?**

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### **Authors' contributions**

*This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.*

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**Case Study**

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### **ABSTRACT**

Widening of the symphysis pubis is a physiological mechanism for vaginal delivery. Hormonal and physiologic influences of pregnancy, mostly due to relaxin cause a two-fold increase from the normal width. A 31-year-old G2A1, developed pain over the pubis along with difficulty in walking from 20 weeks of gestation. The pain initially, was on getting up from bed. It worsened with gestation and was not relieved with analgesics. Again, a 29-year-old G2L1, developed pain over the pubis from 31 weeks of gestation. She had difficulty in turning in bed as well as walking. Both patients were diagnosed with antepartum symphysis pubis diastasis and was confirmed with Xray pelvis postpartum. The risk factors are multiparity, macrosomia, cephalopelvic disproportion, forceps delivery, connective tissue disorders, malpresentation, prior pelvic trauma, intense uterine contractions, abnormally long or short duration of labour, shoulder dystocia, Mc Roberts manoeuvre and epidural anaesthesia. MRI aids in antepartum diagnosis and planning mode of delivery, but is not cost effective in low resource settings. Hence a conservative approach is essential for satisfactory patient outcomes and confirmation of the condition can be carried out postnatally.

**Keywords:** *Pregnancy; Pubic symphysis diastasis; antepartum pelvic pain.*

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## 1. INTRODUCTION

The pubic symphysis has a normal radiographic separation of 4-5 mm [1]. Hormonal and physiologic influences of pregnancy, mostly due to relaxin causes two-fold increase from the normal width [2]. Widening of the symphysis pubis is a physiological mechanism for vaginal delivery [3]. Widening more than 10 mm is pathological and is defined as symphysis pubis diastasis (SPD). It is a complication of vaginal delivery and is prevented by caesarean [1]. SPD has an incidence of 1 in 300 to 1 in 30000 post-natal women. There is paucity of data on the occurrence of this condition in the antenatal period as well as its management and complications [1].

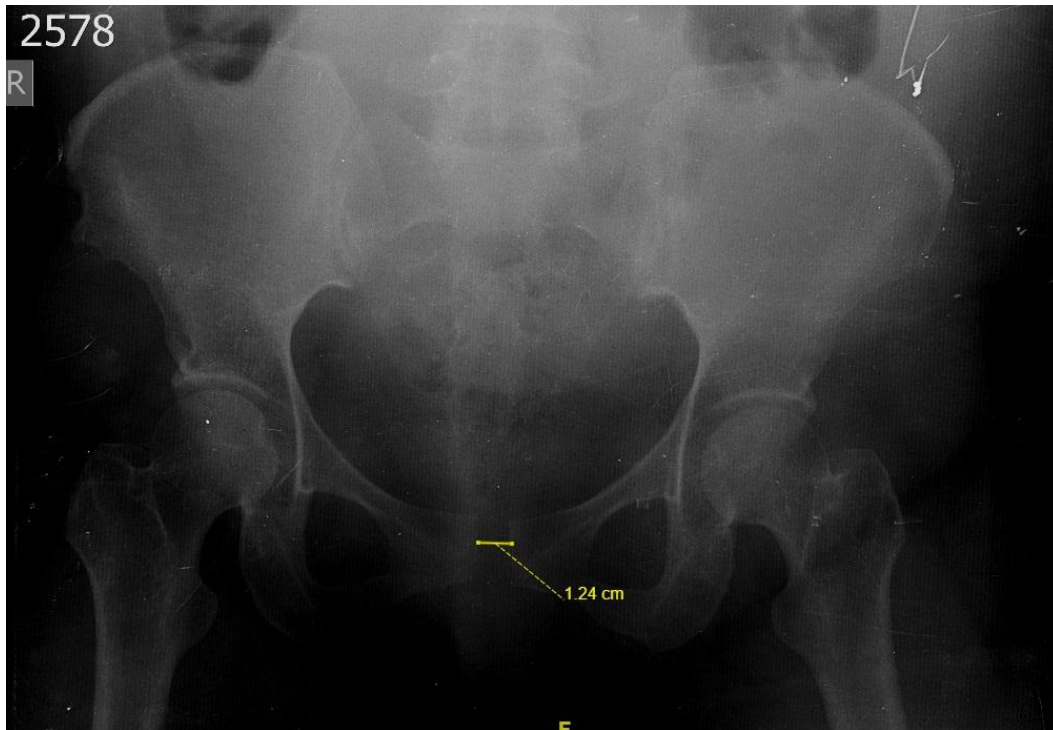
## 2. CASE 1

31-year-old G2A1, developed pain over the pubis along with difficulty in walking since 20 weeks of

gestation. The pain was initially on getting up from bed, worsened with gestation and was not relieved with analgesics. She gave no history of connective tissue/bone disorders or pelvic surgery. She had waddling gait, difficulty in climbing onto the couch and lying down. There was tenderness over the pubis. SPD was suspected, pelvic corset and analgesics were advised. Elective caesarean was performed and a healthy baby weighing 3.5 kg was delivered. There were no peri-operative complications. Post operatively, pain and locomotor difficulty persisted. She received thromboprophylaxis. X-ray of the pelvis on post-operative day 2 showed SPD with a joint width of 1.84 cm (Fig. 1). She was discharged on the fourth post-operative day on conservative treatment. She was advised to follow up with orthopaedics for monitoring of resolution.



Fig. 1. X-ray of the pelvis on post-operative day 2 showing SPD with a joint width of 1.84 cm



**Fig. 2. Post caesarean pelvic x-ray showing SPD of 1.24 cm**

### **3. CASE 2**

29-year-old G2L1, developed pain over the pubis from 31 weeks of gestation. She had difficulty in turning in bed as well as walking. She had no history of connective tissue/bone disorders or pelvic surgery. Antenatal period was otherwise uneventful. She underwent a full term vaginal delivery 5 years ago and delivered a healthy baby weighing 3 kg. There were neither similar complaints nor history of difficult delivery, shoulder dystocia, forceps delivery or prolonged labour in the first pregnancy. Diagnosis of antenatal SPD was considered and pelvic corset and analgesics were advised. A healthy baby weighing 2.8 kg was delivered by an elective caesarean. There were no perioperative complications. Post caesarean pelvic x-ray showed SPD of 1.24 cm (Fig. 2). Postoperatively, pain persisted. She was discharged on conservative management on fourth postoperative day and was advised follow up with orthopaedics.

### **4. DISCUSSION**

Symphysis pubis diastasis is known to occur after vaginal delivery and has not been reported

in the antenatal period. The risk factors are macrosomia, cephalopelvic disproportion, forceps delivery, connective tissue disorders, malpresentation, prior pelvic trauma, intense uterine contractions, abnormally long or short duration of labour, shoulder dystocia, Mc Roberts manoeuvre and epidural anaesthesia [3,4,5]. In a case control study conducted by Sung et al in 2021, they found that the incidence of SPD increased with time along with an increase of maternal age. However, the only statistically significant factor associated with a higher risk of SPD was nulliparity [6]. Symptoms include pain on moving from side-to-side or on weight-bearing. The degree of separation of the pubic symphysis is positively correlated with the degree of pain and negatively correlated with the activities of daily living. Serum relaxin levels and neonatal weight may be used to identify women at a high risk of pubic symphysis separation peripartum [7].

Complications like urinary outflow obstruction, hematoma formation, and sustained painful ambulation occurs rarely. Prolonged immobilization causing venous thromboembolism has been reported [4]. Sacroiliac joint pathology is seen when diastasis is greater than 60 mm [3].

Diagnosis can be confirmed by pelvic X-ray. MRI serves to exclude soft tissue injury [8]. In our patients, SPD was suspected but not be confirmed antenatally due to risk of radiation with X-ray pelvimetry. Conservative treatment is the preferred management [1]. Due to lack of clinical trials, recommending a specific conservative method is difficult [9]. Conservative treatment includes pelvic binder with immediate weight bearing; bed rest with non-weight bearing and closed reduction [4]. Surgical treatment is indicated when there is failed conservative treatment, soft tissue injury or SPD greater than 4 cm [3]. Caesarean section is a preventive method [1].

SPD has a good prognosis with cases showing resolution within 3 months with no long term complications. Symphysis dysfunction as a clinical entity has not shown to be recurrent. Even if recurrent, the current management is clinically based and preferably conservative [10]. However, there is not sufficient data regarding alteration of care for future pregnancies, and requires further studies [4].

## 5. CONCLUSION

SPD is a complication of vaginal birth. However it can occur in the antenatal period as well. Hormonal influences of pregnancy causes widening of the joint but not reported to cross 10mm. The condition poses a diagnostic challenge antenatally due to the risk of radiation exposure with X-Ray. MRI aids in antepartum diagnosis and planning mode of delivery, but is not cost effective in low resource settings. Hence a conservative approach is essential for satisfactory patient outcomes and confirmation of the condition can be carried out postnatally.

## CONSENT

Written informed consent was obtained from the patient for their anonymized information to be published in this article.

## ETHICAL APPROVAL

Our institute, Jawaharlal Institute of Postgraduate Medical Education and Research, Pondicherry does not require ethical approval for reporting individual cases or case series.

## COMPETING INTERESTS

Authors have declared that no competing interests exist.

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