

CASE REPORT

Misdiagnosis of Congenital Pubic Symphysis Diastasis as Post-Traumatic Pubic Diastasis: A Case Report

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*Research performed at Bone & Joint Reconstruction Research Center, Iran University of Medical Sciences**Received: 22 February 2023**Accepted: 18 March 2023***Abstract**

In patients with congenital pubic diastasis, who present with polytrauma injury, pubic diastasis could be falsely attributed to the traumatic event. This generally occurs in asymptomatic patients whose anomaly is not diagnosed before the traumatic event. In this report, we present a case of a 26-year-old male with fracture-dislocation of the left hip and congenital agenesis of pubic bones that was initially misdiagnosed as post-traumatic pubic diastasis due to the patient's reduced consciousness. A closer examination led to noticing his micropenis and the scar from the earlier surgical intervention, and thereby, suspicion of the congenital etiology of the pubic diastasis, later confirmed by pre-trauma radiography. This case reveals that the congenital etiology of pubic diastasis could be missed owing to the patient's reduced consciousness. Therefore, a full inspection of the etiology of pelvic ring injury is necessary before conducting any surgical intervention.

Level of evidence: IV**Keywords:** Agenesis, Congenital, Polytrauma, Pubic diastasis**Introduction**

Pelvic fractures are a serious therapeutic challenge for orthopedic surgeons. These fractures mainly occur following multiple trauma accidents and are associated with a high morbidity and mortality rate. Concurrent pelvic ring disruption is observed in a considerable number of patients with high-energy pelvic fractures, in which reconstruction is required to provide the overall pelvic stability.¹

Pubic diastasis is reported to occur in almost 15% of pelvic ring injuries.² In unstable patients presented with pubic diastasis, immediate fixation of the pelvic ring is necessary for resuscitation.² In rare cases, congenital pubic diastasis is referred to as pelvic fracture. In these cases, the subtle clinical and radiological signs might be attributed to traumatic pubic diastasis.^{3,4} This misdiagnosis could result in the overtreatment of patients. In addition, the primary source of instability could be missed, which further endangers the already vulnerable patient.

In this study, we report a case of a 25-year-old male who presented with pelvic fracture and congenital pubic

diastasis, initially misdiagnosed as post-traumatic diastasis in the preoperative radiographic investigation. Through this report, we aimed to raise awareness regarding the misdiagnosis of congenital pubic diastasis as post-traumatic pubic diastasis.

Case reports do not require to be reviewed by the ethical board of our institute. However, written informed consent was obtained from the patient to use his medical data for publication.

Case Presentation

A 26-year-old male was referred to our center with high-energy trauma following a severe car accident. The patient had significant loss of consciousness with a Glasgow Coma Scale of 13. In the anteroposterior hip radiography, a significant widening of pubic symphysis was evident [Figure 1]. The fracture-dislocation of the left hip was also noticed in the radiographic assessment of the hip. At the initial evaluation, he was consulted with the diagnosis of open-book pelvic ring injury.

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Figure 1. Anteroposterior radiograph of the hip showing significant widening of the pubic symphysis and fracture-dislocation of the left hip

When the patient was visited by the hip specialist surgeon, he was still confused and did not cooperate well. However, the vital signs were completely stable (blood pressure of 100/60, pulse rate of 98, and O2Sat of 98%). After a closer examination, a surgical scar was noticed on the lower part of the anterior abdominal wall. The patient had a micropenis, and it was evident that the patient had previous surgeries in the genitalia and bladder regions. The genitalia were abnormal, but the patient had no pain or tenderness in the anterior portion of the pelvis.

The pelvic fracture-dislocation was immediately reduced with sedation in the emergency department. Post-reduction radiography revealed the correct positioning of the hip. A hip CT scan was also obtained, in which the pubic distortion seemed more like agenesis instead of a pelvic ring injury [Figure 2]. At the same time, the medical record of the patient was received that included a previous voiding cystourethrogram, in which the pubic agenesis was also present [Figure 3]. Accordingly, it was confirmed that the present pubic diastasis was congenital and not post-traumatic.

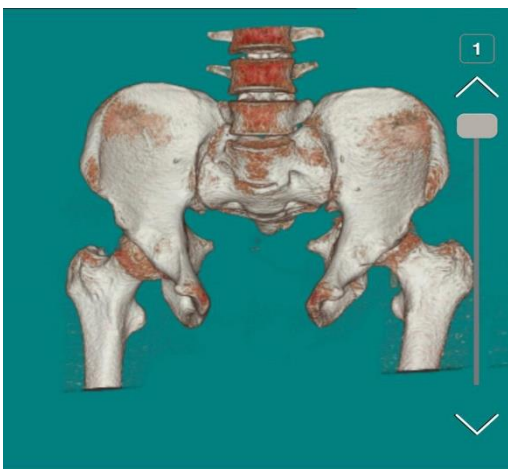


Figure 2. Reconstruction CT scan suggesting pubic symphysis agenesis instead of a pelvic ring injury



Figure 3. Pre-trauma voiding cystourethrogram of the patient confirming pubic symphysis agenesis

The patients underwent surgery to fix the posterior column acetabular fracture without further surgical intervention [Figure 4]. The hospitalization period was event-free. Moreover, the six-month follow-up of the patient was without complications.



Figure 4. Surgical fixation of the posterior column acetabular fracture

Discussion

Anterior separation of the pubic symphysis in the radiographic investigation is the main clue for congenital anomalies of the urinary tract and genitalia. This condition can be associated with various clinical syndromes and diagnosed early in the patient's life. However, in a considerable number of patients, it has no associated syndrome and thus remains undetected or incidentally detected at older ages.⁵ Congenital agenesis of the pubic bones is extremely rare and generally presents with associated clinical syndromes that ease the diagnosis in the initial years of the patient's life.^{6,7}

In patients with congenital pubic widening, who present with polytrauma injury, the separation of the pubic

symphysis could be falsely attributed to the traumatic event, leading to the overtreatment of the patient. To the best of our knowledge, this condition has only been reported in one earlier study. Shamseer et al.⁴ reported congenital pubic diastasis in two patients following high-velocity road traffic accidents. The patients had subtle radiological and clinical signs, leading to the initial misdiagnosis as post-traumatic diastasis. After a closer investigation, the congenital etiology of the diastasis was identified. They raised awareness regarding the presence of this anomaly in polytrauma patients because it could present with negligible clinical signs and thereby easily be mistaken for a traumatic diastasis. In the present study, the patient's anomaly had been detected several years earlier, and the patient had undergone surgery for the treatment of his genitalia problems. However, the congenital etiology of the pubic diastasis was not initially identified owing to the patient's reduced level of consciousness. This case reveals that even in patients with clinical symptoms and early detection, the congenital etiology of pubic diastasis could be missed owing to the reduced level of consciousness. Therefore, trauma surgeons should be more aware of this condition, particularly in patients with reduced consciousness.

Full inspection of the etiology of the pelvic ring injury is necessary to rule out the congenital base of the defect in these patients. In this respect, it could be very helpful to investigate the skin around the genitourinary tract for previous scars and review the past medical history of the patients, including a voiding cystourethrogram.

Altogether, congenital pubic diastasis is a rare condition

that could be mistakenly attributed to the traumatic event, leading to the overtreatment of the affected patient. Accurate clinical evaluation of the patient and inspection of the surgical scars around the genitourinary tract is necessary to avoid misdiagnosis of congenital pelvic ring problems in patients with multiple traumas.

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