

A Rare pelvic ring fracture: Open book fracture

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Abstract

Open book pelvic fracture is a rare and serious fracture, secondary to anteroposterior compression of the pelvis causing disjunction of the symphysis pubis and the sacroiliac joint, often associated with vascular, neurological or urological lesions. Standard radiography is used to make the diagnosis and CT scans to characterise the lesions. The treatment is surgical. We report here a rare case of an open-book pelvic fracture following a motor-cycle accident.

Keywords: Traumatism, open book, pelvic fracture, symphysis pubis disjunction, CT scan.

Abbreviations: CT: Computed Tomography.

Discussion

Open-book pelvic fractures are potentially rare and serious, representing around 0.3-8.2% [1] of all fractures, with a high mortality rate estimated at 10.4% [2]. This injury is typical of motorcycle accident or a high-energy accident. This is a consequence of anteroposterior compression of the pelvis responsible for disjunction of the symphysis pubis and the sacroiliac joint, secondary to a complete rupture of the ligament. Often unstable, it is associated with vascular, abdominal, neurological and urinary lesions [3]. Standard X-rays identify 90% of pelvic fractures, and CT scan is still the basic examination used to confirm and characterise the dislocation, showing a diastasis of the pelvic symphysis and sacroiliac joint, with an acetabular fracture, which is often associated. Treatment is dependent on the degree of pelvic instability, displacement and activity of the patient. It often involves open reduction and internal fixation, but sometimes external fixation may be sufficient to stabilise the fracture.

Clinical medical image

A 26-year-old man presenting to the emergency department after a high-speed motorcycle collision with facial and pelvic impact. Clinical examination shows a conscious patient, with a GSC of 15/15, haemodynamically unstable: tachycardic (HR at 140 Bpm) with hypotension (BP: 8/4 CmHg), and eupnoea (RF: 22 breaths/min). Inspection revealed parietal, scrotal and perineal haematomas. A body scan was performed urgently to evaluate the injury, revealing a grade II open-book pelvic fracture: Diastasis of the symphysis pubis at 34mm with anterior disjunction of the right sacroiliac joint, associated to a fracture of the left hemi-sacrum. (Figure 1).

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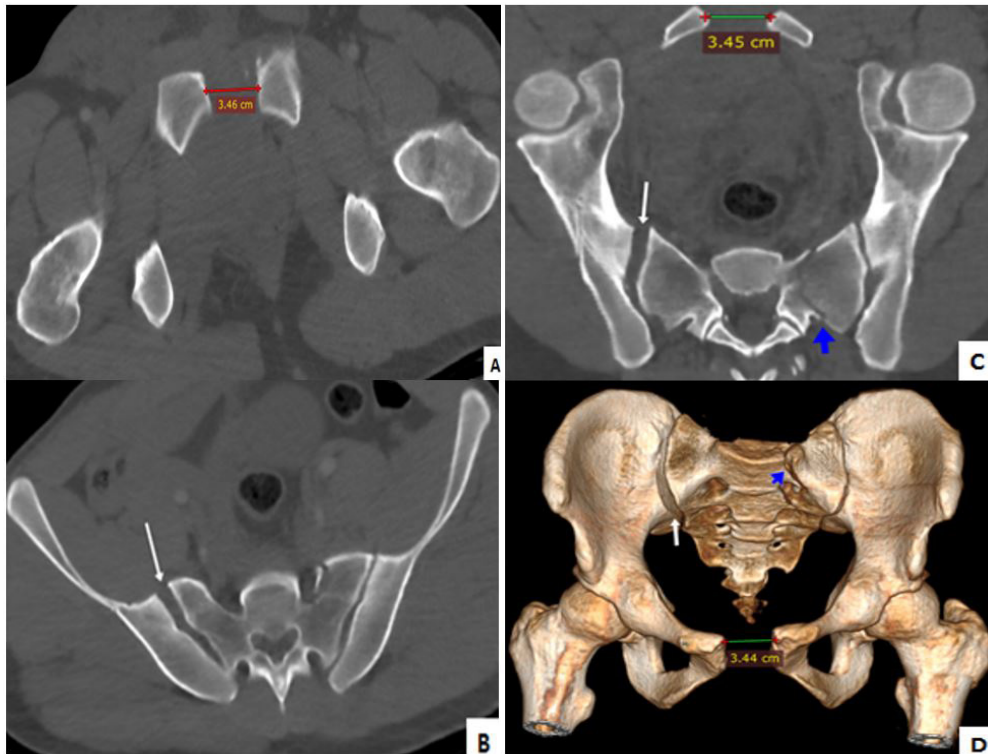


Figure 1: A CT scan images of the Bone window (A, B, C) and volume reconstruction (D) showing a diastasis of the symphysis pubis measured at 34 mm (blue arrow) with disjunction of the right sacroiliac joint (white arrow) giving the appearance of a grade II open book fracture. A fracture of the left hemisarcum was also present.

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