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Open Book Pelvic Fracture

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History of present illness: A 31-year-old male was brought in by paramedics status post high-speed motorcycle collision. The patient was tachycardic and hypotensive with an initial Glasgow coma scale (GCS) of 11. He required immediate blood transfusion and intubation. The patient had multiple traumatic injuries including a deformity to the left thigh and an unstable pelvis. He had palpable distal pulses, and grossly normal sensation and motor function to his bilateral lower extremities.

Significant findings: The initial radiograph of the pelvis shows an open-book pelvic fracture deformity with pubic symphyseal dislocation, left greater than right sacroiliac diastases, and fractures of the left superior and inferior pubic rami, right inferior pubic ramus, and left acetabular anterior column. The additional inlet and outlet radiographs of the pelvis after application of a pelvic binder also show an open book fracture with significant improvement of the widened pubic symphysis.

Discussion: Severe pelvic injuries, including open book dislocations, have a high mortality rate of 10.4%.^{1,2} The mechanism is commonly a motor vehicle collision or fall from a significant height.³ Open book dislocations of the pubic symphysis are rare, representing 0.3–8.2% of all fractures,^{4,5} and can lead to fatal complications through vascular, abdominal, and nervous injuries.⁶ In severe pelvic traumas, pelvic binders must be applied as soon as possible to reduce bleeding by realigning fracture surfaces and provide stabilization of unstable fractures.^{7,8} Open book dislocation can be identified via plain anteroposterior pelvis radiographs.⁹ Definitive treatment of open book dislocations are highly individualized and come secondary to controlling hemorrhagic bleeding. The most common method is open reduction and internal fixation (ORIF) although in some cases, external fixation can be sufficient to stabilize the pelvis.¹⁰ Our patient was admitted for multiple traumatic injuries and underwent closed reduction and percutaneous fixation of posterior pelvic ring, including bilateral sacroiliac joints, and ORIF of the pubic symphysis.

Topics: Open book pelvis, pelvic fracture, unstable pelvis, pubic symphyseal dislocation, radiograph, trauma.

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