Eliminating Confusion: Iliopectineal-Sparing Anterior Column Acetabular Fractures

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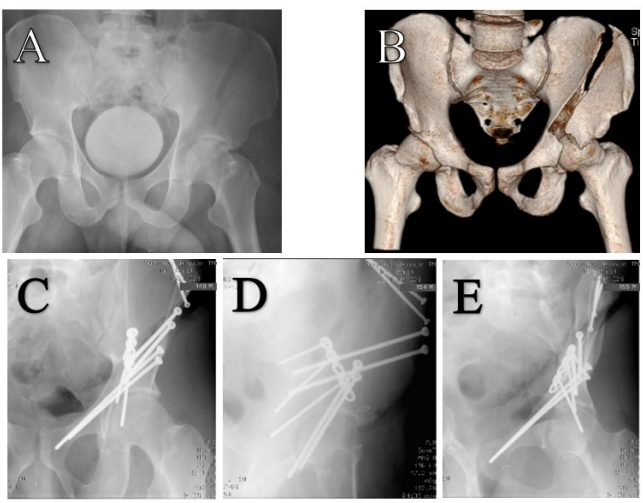
Purpose: Isolated anterior column acetabular fractures are rare injuries and occur in approximately 4% of all acetabular fractures. A variant pattern, identified in 2 cases in Letournel and Judet's seminal series, includes a fracture of the anterior column without disruption of the iliopectineal line. This fracture leaves the pelvic brim intact while the fracture exits into the acetabular dome. The purpose of this study is to describe the iliopectineal-sparing anterior column (IPSAC) acetabular fracture.

Methods: The study was conducted at 3 Level I trauma centers after obtaining IRB approval. All patients with operatively treated acetabular fractures over a 7-year period (2013-2020) were reviewed to collect cases of IPSAC fractures. Demographic information, mechanism, history of dislocation, operative details, radiographic follow-up, and clinical notes were reviewed.

Results: We identified 814 patients with an operatively treated acetabular fracture at 3 Level I trauma centers over a 5-year period (2014-2019). 26 patients (3.2%) sustained a displaced IPSAC fracture. 24 were male, with an average age of 47.7 years (range, 21-80 years). The average body mass index (BMI) was 30.5 kg / m2. Two patients presented with a concomitant hip dislocation. The average operative blood loss was 450 mL (range, 100-1250 mL) and the average operative time was 196 minutes (50-299 minutes). The patients were followed for an average of 17.2 months after surgery (range, 1-72 months). 25 patients were fully weightbearing and pain-free.

Conclusion: This is the first clinical series of IPSAC acetabular fractures in the literature. When displaced, this pattern results in an unstable acetabular dome, necessitating open reduction and internal fixation. Open reduction through an anterior approach with stable fixation results in excellent clinical and radiographic outcomes.



A: AP pelvis radiograph demonstrating an IPSAC acetabular fracture

B: 3D CT reconstruction demonstrating an IPSAC acetabular fracture

C: AP fluoroscopic image demonstrating fixation of the IPSAC acetabular fracture

D: Iliac-Oblique fluoroscopic image demonstrating fixation of the IPSAC acetabular fracture

E: Obturator-Oblique fluoroscopic image demonstrating fixation of the IPSAC acetabular fracture