

Simultaneous Bilateral Traumatic Olecranon Process Fracture: A Rare Case Report

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Abstract

Introduction: Simultaneous traumatic bilateral olecranon fractures are rare as similar forces should act bilaterally to cause the fracture. Very few such cases have been reported.

Case report: We present the case of a 28 year old female who presented with pain and swelling of both elbows after a fall. Plain radiograph revealed isolated displaced fractures of both the olecranons. The patient was treated with tension band wiring of both elbows which resulted in complete recovery.

Conclusion: Treatment of bilateral olecranon process fractures is same as that of unilateral fractures.

I. Introduction

Olecranon process fractures are very common and accounts for about 10 % of fractures around the elbow¹. They can present as complex injuries and can range from undisplaced fractures to fracture dislocations². These fractures are usually unilateral. Bilateral olecranon fractures are rare and are seen in systemic diseases or as pathological fractures^{3,4}. Limited cases have been reported about bilateral olecranon fractures due to trauma⁵. We report a case of simultaneous bilateral traumatic olecranon fracture, in a patient with no systemic disease, which was treated with tension band wiring.

II. Case Report

A 28 year old female presented to the emergency room with acute pain and swelling of both elbows after sustaining a fall while going down the stairs. Physical examination revealed swelling, deformity and restricted movements. Plain radiography revealed bilateral displaced transverse olecranon fractures (Fig. 1a,b). Patient was taken up for surgery after obtaining anesthetic clearance. Under general anesthesia with the patient in supine position the right olecranon was accessed posteriorly. The fracture was reduced and stabilized with a 4 mm cannulated cancellous screw. A hole was drilled through the posterior cortex of ulna. A 20 gauge cerclage wire was passed through the hole to leave segments on either side of the holes and tightened around the screw proximally in a figure of eight pattern. The contralateral fracture was fixed similarly. Post operatively, both elbows were immobilized in 90 degrees flexion. Radiographs showed good fracture reduction (Fig 2a,b). Passive movements and active assisted movements were started on the seventh day. At the 6 month follow up, the patient had recovered completely with no loss of movements.

III. Discussion

Olecranon fractures are common. These fractures are usually unilateral and are due to trauma or blunt injury. The pull of triceps tends to displace these fractures. The most common mechanism of an olecranon fracture is a fall on the semiflexed supinated forearm. The next most frequent cause of this injury is direct trauma, as in falls, or blows to, the point of the elbow. In our case the injury was due to direct impact on the olecranons. Various classifications exist for these fractures^{6,7}. The Mayo classification is the most preferred one. After the Mayo classification⁶ the olecranon transverse fractures can be classified into different groups. Type I fractures have less than 2 mm of displacement, type II fractures are displaced by more than 2 mm, but the joint is stable, and type III fractures are displaced and associated with concomitant subluxation or dislocation of the elbow joint. Every fracture can furthermore be subdivided into noncomminuted or comminuted. Complete anatomical restoration of the joint is the principal purpose of the definitive treatment. Treatment options for displaced fractures include tension band wiring, intramedullary nailing, plate fixation, excision of the proximal fragment and polyethylene tension suturing⁵. Tension band wiring is a widely accepted treatment. The tension band principle as applied to transverse olecranon fractures is based on the premise that distraction forces on the outer cortex of the ulna during elbow flexion are converted to compression forces on the articular surface of the olecranon at the fracture site.

There are a few reported cases of bilateral olecranon fractures. The only report of traumatic etiology was by Citlak et al who described two such cases which they successfully managed with tension band wiring⁵. Other reported cases of bilateral olecranon fractures due to a pathological cause. Kirmani et al described

bilateral olecranon fracture in a patient of rheumatoid arthritis due to osteopenia³. O daly et al described bilateral olecranon fractures in a patient with sarcoidosis⁴.

IV. Conclusion

Bilateral traumatic olecranon process fractures of the elbow are rare. Early identification and fixation of displaced fractures can lead to complete recovery in function. Treatment and rehabilitation of bilateral olecranon fractures are same as that of unilateral fractures.

References

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Figures



Fig 1a



Fig 1b

Figure 1a,b: Preoperative radiographs of both elbows



Fig 2a



Fig 2b

Figure 2a,b :Post operative radiographs of both elbows