



A RARE CASE OF TRAUMATIC BILATERAL IDENTICAL CORONOID AND TROCHLEA FRACTURE.

Orthopaedics

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ABSTRACT

Elbow is a complex joint and gets involved in both athletic and non-athletic injuries. Among the emergency department visits for upper limb injuries each year, it has been estimated that 15% involve the elbow joint (1). Injuries of coronoid process and trochlea, though uncommon, are usually accompanied with associated elbow injuries (3) whereas isolated coronoid process of ulna fractures are seen in only 2-5% cases.(2) Trochlea fractures are even more rare due to the inaccessibility of the fragment to direct traumatic force.(3) Furthermore, complications in a traumatic injury of elbow, like stiffness, heterotrophic ossification, instability or subluxation of elbow joint & post-traumatic arthritis (4) suggest the need for proper management of such injuries. We present a rare case of traumatic bilateral identical coronoid and trochlea fractures which were managed with Herbert screw fixation with good functional and radiological outcome.

KEYWORDS

Bilateral elbow, Trauma, Coronoid and Trochlea fractures.

Case-

25 year old male came to the OPD with alleged history of road traffic accident and complaints of bilateral elbow pain, swelling and restricted movements. On examination of bilateral elbow diffuse swelling and tenderness was noted with restricted and painful range of motion at bilateral elbow. However sensory and motor component of both upper limbs were intact with normal peripheral circulation of limb.

Evaluation of both elbow with X-rays in AP and lateral views were done which showed bilateral coronoid and trochlea fracture.

A CT scan of bilateral elbow with 3D reconstruction was done for better understanding of fracture pattern and surgical planning.

Bilateral coronoid was classified as type-2 as per Regan and Morrey classification of coronoid fractures and bilateral trochlea as type-3 as per Dubberleys classification of capitellum and trochlea.

Patient was operated using Hotchkiss approach for open reduction internal fixation of bilateral coronoid and trochlea fracture with Herbert screws. Post-operatively patient was immobilized with above elbow slab for 1 week following which active and passive range of motion was started in hinged ROM brace.

Subsequently in routine follow ups and physiotherapy patient achieved good functional range of motion with signs of union radiologically.



Figure 1- X-rays and CT scans of right elbow showing coronoid and trochlea fracture.

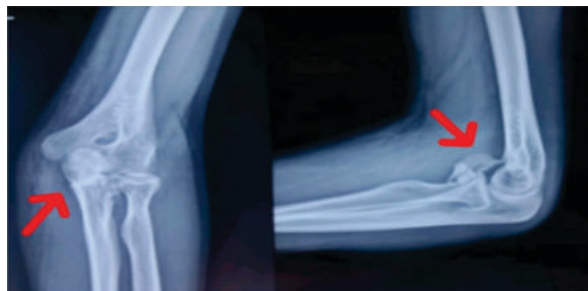


Figure 2- X-rays and CT scans of left elbow showing coronoid and trochlea fracture.



Figure 3- Immediate bilateral post-operative X-rays showing fracture fixation using Herbert screws.



Figure 4- Clinical images showing post-operative functional range of motion achieved at 2 months.



Figure 5- Post-operative X-rays showing signs of union bilaterally at 2 months.

DISCUSSION:-

Regan and morrey is traditionally used classification for coronoid fractures based on amount of coronoid process involvement with

Type-1: coronoid process tip fractures.

Type-2: fracture <50% of coronoid height.

Type-3: fracture >50% of coronoid height.(2).

While trochlea fractures are classified as per Dubberley's Classification-

Type-1: fracture involving capitellum with or without lateral trochlear ridge.

Type-2: fracture that involve capitellum and trochlea as one piece.

Type-3: fracture of capitellum and trochlea as separate fragments.(5)

These classifications are important for surgical planning and management of fractures.

Unstable elbows require surgical management to maintain the stability.

Large coronoid fractures can be rigidly fixed and small or comminuted fractures can be fixed with suturing the bone and anterior capsule to the anterior ulna using pull out sutures or suture anchors. The rare small fragments with no soft tissue attachments can be excised.(6)

Trochlea fracture fixation depends upon size of the fragment and comminution.

Herbert screws or Kirschner wires and compression screws followed by early range of motion exercise, provide successful results.(3)

In this case we managed displaced coronoid and trochlea fracture with headless Herbert screw fixation.

Combined coronoid and trochlea fractures are rare to be seen, however our case had bilateral identical fractures which makes it even more rare type of injury.

A detailed history taking, examination and planning is needed to manage such type of injuries.

Radiography (AP/lateral view) is an essential tool for diagnosis of such injuries along with Computed tomography which provides better understanding and classification of fracture pattern required for surgical planning as was done in our case.

Herbert screw fixation for coronoid and trochlea fractures with early mobilization was done in our case to avoid posttraumatic stiffness.

Routine follow ups should be taken in order to achieve good functional outcome.

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