

Isolated Trochlear Fracture: A Rarity In Clinical Practice

¹Kumar S; ²Nik Alyani NAA; ¹Thow SY; ¹Saadon I

¹Orthopaedic Department, Hospital Sultan Ismail Johor Bahru ² Orthopaedic Department, IIUM

INTRODUCTION:

Isolated trochlear fractures are rare occurrences in orthopedic trauma [1]. The available publications highlight the significance of recognizing and addressing trochlear fractures promptly to prevent long-term complications and optimize functional outcomes.

REPORT:

We report a case of 12-years-old boy who presented with right elbow pain post alleged fall while climbing a lorry. On examination, there was tenderness and swelling with limited range of motion over right elbow however distal neurovascular status was intact.

Right elbow x-ray showed irregularity over the joint line from AP view and from lateral view, there was an anteriorly displaced avulsed distal humerus bone fragment (Figure 1). Patient was initially diagnosed to have lateral condyle of right humerus fracture.

After clinical and radiographical assessment, patient was planned for open reduction and k-wiring. Intraoperatively, noted fracture over the trochlear (Figure 2). Open reduction and K wiring of right trochlear done with 2 cross k-wires and above elbow backslab was applied.



Figure 1



Figure 2

DISCUSSION:

Isolated fractures of the trochlear are rare due to its protection against direct or indirect trauma due to a number of factors which includes lack of tendon and ligaments insertion to the trochlea, its peculiar architecture and its deep location contained by the olecranon [1][2]. Besides that, as compared to the radio humeral joint, the ulno-humeral joint is subjected to very light compressive and shear forces, which explains the low frequency of trochlear fractures compared to capitellar fractures [2].

The diagnostic challenge lies in distinguishing trochlear fractures from other elbow injuries and radiographic evaluation of the fragment is often confusing. It necessitates a thorough clinical examination complemented by advanced imaging modalities, commonly Computed Tomography (CT) with 3-D reconstruction as this could improve intrarater and interrater reliability [3]. Zimmerman et al. (2015) recommended MRI in skeletally immature patients as this could spare the child of higher dose of radiation while providing a way to evaluate the ligamentous structures surrounding the elbow joint. [4]

The decision on type of treatment depends on the fracture morphology, comminution, fragment size, and surgeon preference [1]. The options of treatment include but are not limited to closed reduction, open reduction with internal fixation (cannulated screws, headless screws, threaded Kirschner wires) and prosthetic replacement [5]. The trochlea is considered the keystone of the elbow joint; hence excision of trochlear fragments should be avoided [6].

CONCLUSION:

Isolated trochlear fractures represent a distinct subset of elbow injuries that demand a nuanced understanding for accurate diagnosis and effective management. The limited but growing body of literature underscores the significance tailored treatment strategies.

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