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Missed Isolated Trapezium Fracture in Emergency Department

Dr. Sohael Khan[1*], Dr. Mahendra Gudhe[2], Dr. Sanjay Deshpande[3], Dr Pradeep Singh[4], Dr. Bhushan Patil[5], Dr. Shraddha Singhania[6]

[1]Assistant Professor, Department of Orthopaedics, Jawaharlal Nehru Medical College, Sawangi (Meghe), Wardha
[2]Assistant Professor, [3]Professor and Unit Head, [4]Professor and Head, [5]Junior Resident, Department of Orthopaedics, Datta Meghe Institute of Medical Sciences, Sawangi (Meghe) Wardha - 442004
[6]Assistant Lecturer Radiodiagnosis, Department of Radiology; DMIMS, Wardha

***Corresponding author**
Dr. Sohael Khan
Email: drsohaelkhan@hotmail.com

Abstract: Isolated trapezium fractures are one of the rarest entities. Most of these isolated fractures go unnoticed. A standard radiograph of the wrist may sometimes fail to diagnose fractures of trapezium these require a special view (Roberts View) or Computed tomography for accurate diagnosis. Computed tomography can be very helpful in visualizing a hairline fracture if any. In this case report we present a neglected isolated trapezium fracture.
Keywords: Isolated Trapezium, Neglected, Emergency department

INTRODUCTION

Fractures of the trapezium account for 3-5% of carpal bone fractures [1]. Isolated trapezium fractures are a rare entity and most of these fractures occur with axial loading or shearing mechanisms across the first CMC joint. Therefore associated fractures of either the base of the first metacarpal or the scaphoid are reported [2, 3]. Most often they are associated with other carpo meta carpal injuries such as Bennett's fracture-dislocation, Rolando's fracture, and fractures of the scaphoid, hook of the hamate and carpo meta carpal dislocations [4, 5]. In this we are reporting a case of neglected isolated fracture of trapezium.

CASE REPORT

A 65-year-old gentleman came to our emergency department with history of sustaining injury to his non – dominant left hand after fall from a tree (10 feet height). Since then he was complaining of pain and swelling over the left wrist and hand. On examination there was a marked tenderness over the thinner region and abduction and adduction of the thumb was painful, rest finger movements and wrist movements were normal. Radiographs of the hand with wrist were done but were inconclusive (Figure 1). In view of possibility of a hairline fracture of the scaphoid the patient was managed with scaphoid cast and was called for follow – up in fracture clinic after 3 weeks. On review at 3 weeks the tenderness was still persisting. Radiographs were reviewed &CT scan of the wrist was done which suggested minimally displaced fracture trapezium. (Figure-2).

Fig-1: AP and Lateral Radiograph of Wrist

Fig-2: 3D reconstructed CT image is suggestive of linear undisplaced fracture of Trapezium

DISCUSSION

Thumb is the most important part of the hand for various functions. Trapezium plays a major role in functioning of the thumb, such as grasping, pressing and complex movements like pincher grip, and hence we should not overlook these fractures. Fracture of the trapezium occurs either by direct force or by indirect fall on the hand or extended thumb. Symptoms of trapezium fracture are sometimes misleading to that of scaphoid fracture. If not diagnosed accurately it might lead to chronic pain in the wrist, osteoarthritis of trapezium etc.

Fractures of the isolated trapezium constitute only 3- 5% of the carpal bone fracture [1]. These fractures are mainly missed in the emergency department so a through clinical examination, radiography and if needed special views and computed tomography should be done. Even with the initial negative projection radiograph an additional CT scan should be done to rule out occult fractures [6].

This case demonstrates that the diagnosis of carpal fractures can be challenging and complex. There is a high probability of misdiagnosing or missing the fracture in emergency department. So special care during radiography should be done in view of special views. The Radiologist should focus not only on the typical sites of fracture as the distal radius and the scaphoid, but also on rare sites of fracture such as the trapezium. In particular, an overlooked trapezium fracture can potentially lead to long standing pain, post traumatic osteoarthritis, etc. which might need surgical management such as fusion or excisional Arthroplasty.

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