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Association of Abennet and Trapezius Fracture: Case Report

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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Case Study

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ABSTRACT

The association of Bennet fracture and fracture of the trapizius are rare, and only few cases were reported in the literature, the authors report a case of 56 years old male after a slip, who was treated by percutaneou spinning according to Iselin technique. Functional outcomes were satisfying after 1year follow-up.

Keywords: Trapezium; fracture; trapeziometacarpal; metacarpal bone carpal fractures.

1. INTRODUCTION

The trapezium fracture is a rare injury and represents 3% of carpal fractures [1] it can be isolated or associated with other injuries, the most common being Bennett's fracture [2]. The trapeziometacarpal joint is a complex joint due to its high degree of mobility, and the mechanism is often combined [3]. Carefulanalysis of the radiographis fundamental to not miss any

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trapezium lesions that may lead to rhizarthrosis, the treatment is essentially surgical and Islin technique improves the mounting stability [4,5]. Through an observation of a patient presenting with a trapezium fracture associated with a Bennett's fracture and a literaturereview, we will discuss the diagnostic and the rapeutic particularities of this exceptional injury association.

2. CASE PRESENTATION

A 56-year-old patient presented to the emergency department with a closed trauma to the right wrist following a slip with the reception point being the palm of the right hand in dorsiflexion. Clinical examination revealed pain and total functional impotence with edema of the the narcompartment without downstream vascular or neurological disorders. A wrist X-ray (Fig. 1) showed an intra-articular vertical fracture of the trapezium associated with a Bennett's fracture withinternaldisplacement of the articular fragment but without dislocation of the first metacarpalbone. A CT scan wasrequested (Fig. 2), which did not show anyassociated dislocation or lesion.

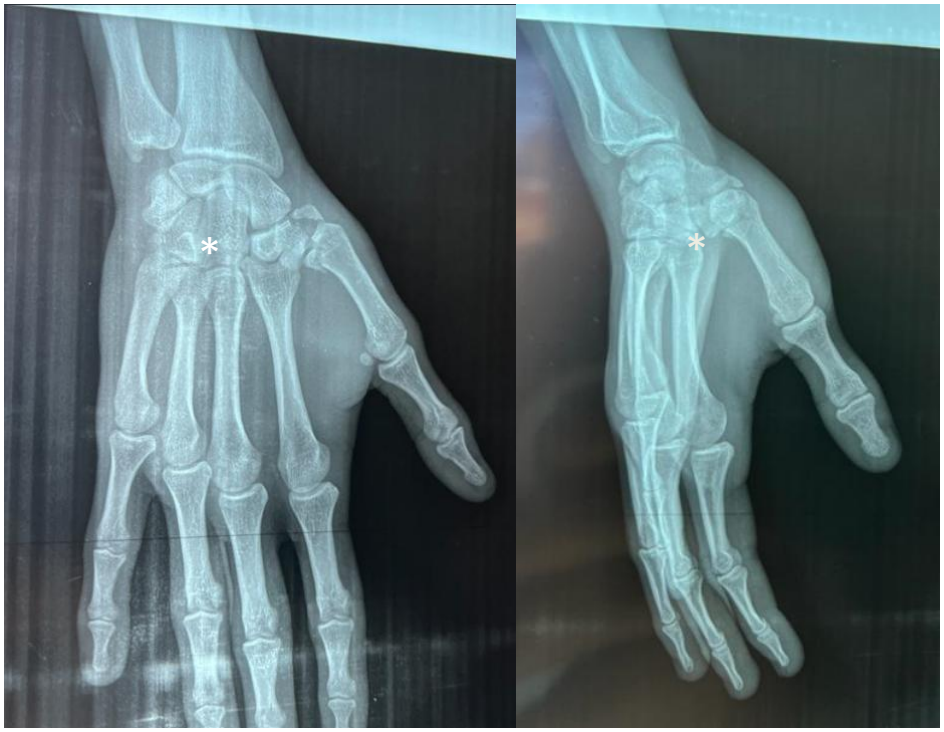

Fig. 1. Trapezium fracture associatedwith a Bennett's fracture (*)

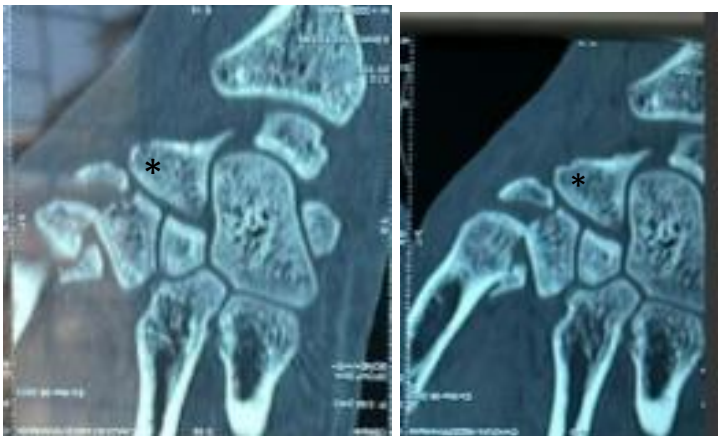

Fig. 2. CT scan image showing a trapezium fracture associatedwith a Bennett's fracture (*)

The patient underwent surgical treatment under local-regional anesthesia. Reduction was performed by closed external manipulation under fluoroscopic control. Osteosynthesis by pinning according to the Islin technique was performed, with spontaneous anatomical reduction of the trapezium fracture. Postoperative immobilization with a commissural plastersplint was carried out for six weeks, followed by a wrist and hand rehabilitation protocol.

The patient had a favorable outcome after a one-year follow-up, with consolidation of the fractures and functional recovery.

3. DISCUSSION

The trapezium fracture isa rare injury, accounting for only 3% of all carpal fractures [6]. It is associated with the Bennett fracture in 15% of cases [7].

There are two theories regarding the pathogenesis of trapezium fractures. According to Manon'stheory, a fall on the hand in dorsal flexion and radial inclination causes the radial styloid to wedgeinto the trapezium, combined with tearing by the trapezoid ligament. Monsche's theory talks about a commissural shearthat results in trapezium fracture, trapeziometacarpal dislocation, or first metacarpal base fracture depending on the application point [8].

Radiography confirms the diagnosis, but the overlap of the trapezium with the trapezoid does not always allow the fracture to be visualized on frontal and profile incidences. The Robert incidence, performed with the hand in pronation, shows the body of the trapezium [2]. CT scan allows for further evaluation in difficult cases [9].

Orthopedic treatment with plaster immobilization with thumb in opposition gives good results for isolated and non-displaced trapezium fractures [10]. This treatment is not indicated in the case of association with a Bennett fracture.

Reduction of these fractures should be an atomical due to their articular nature, and it can be done by open or closed reduction. For fractures with large fragments, osteo synthesis can be done using thin Kirschnerwires or Herbert screws [2]. Osteosynthes is with screws should be preferred. Trapezectomy may be considered in comminuted fractures [11], and non-anatomical reduction exposes to complications, including rhizarthrosis.

Bennett fracture requires closed reduction osteosynthesis by percutaneouspinning, and several techniques are proposed. Islin's technique is the most commonly used [2,12], and open reduction and internal fixation allow for the reduction of the articular surfaces [2].

4. CONCLUSION

The association of ipsilateraltrapezium and Bennett fractures is rare, and the diagnosis maybe incorrect, which highlights the importance of specific radiological incidences and complementary CT scanin identifying this lesion. Adequate treatment can prevent complications, mainly represented by rhizarthrosis.

CONSENT

As per international standard or university standard, patient(s) written consent has been collected and preserved by the author(s).

ETHICAL APPROVAL

As per international standard or university standard written ethical approval has been collected and preserved by the author(s).

COMPETING INTERESTS

Author has declared that no competing interests exist.

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