Isolated Fracture of the Trapezoid. A Rare Injury

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Dear Sir,

Trauma to the wrist can result in carpal bone fractures that are not always apparent on initial radiographic examination. Fractures of the trapezoid bone are the rarest of carpal fractures, with only a few reported cases in the published literature. We present a case of isolated fracture of the trapezoid that was managed conservatively and had a full functional recovery.

A 20 year old male presented to the Emergency Department reporting having a car door accidentally close against the back of his wrist a few hours prior. The patient presented with localized edema and tenderness proximal to the base of the 2nd metacarpal. Radiographic evaluation was normal. Nonetheless some suspicion remained that an occult fracture of either a carpal bone or the base of the 2nd metacarpal was present. A CT scan of the wrist was obtained, which revealed a minimally displaced fracture of the trapezoid extending in the axial plane (Fig. 1). The patient was placed in a short arm splint for 6 weeks. At the follow – up visit, the pain had subsided and the edema had completely resolved, albeit some wrist stiffness was present. A new CT scan was obtained at that time, which demonstrated near complete union of the fractured parts. After a 2 week self-exercise program for the stiffness the patient was completely symptom free. At 1 year, he remains symptom free and reports being entirely satisfied with the outcome.

The trapezoid is the least commonly fractured carpal bone, with the literature containing only a few case reports and case

series. These fractures can occur in isolation or in combination with other injuries to the carpus or metacarpals.

Most authors describe the mechanism of injury to be either an axial loading or bending force through the 2nd metacarpal [1, 2] or a direct blow to the wrist [2]. The presentation is typically that of pain and tenderness at the base of the 2nd metacarpal. Initial radiography is invariably normal, and diagnosis was made through the use of CT [1, 2], MRI [3] or even technetium bone scan [3]. The ease and availability of CT scans and other advanced imaging modalities is probably the reason that these injuries are identified more frequently in recent years.

Fig. 1 Axial thin slice (1 mm) CT demonstrating the fracture line through the trapezoid bone

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The limited number of published cases prevents the recommendations regarding treatment of trapezoid fractures from carrying much power or weight. Nonetheless, the literature thus far suggests that for isolated fractures with minimal displacement, cast immobilization results in satisfactory outcomes [1]. Surgical treatment was performed for displaced fractures or for complex injuries [3]. Still, there are differences regarding type of casting (whether short-arm cast or thumb spica), length of time of immobilization, and so forth. Similarly, operative treatments were individualized based on the pattern and complexity of osseoligamentous injuries.

Not much is known about the long-term outcomes of trapezoid fractures. Adverse outcomes of other carpal bone fractures, especially the scaphoid, such as nonunion, avascular necrosis and development of arthritis are well known. In some of the cases reported in the literature so far, delayed union and nonunion resulted in persistent pain [3, 4] and diminished grasp power [4]. Thus, a missed fracture could very well result in loss of function and diminished quality of

life. It is only proper that in any patient with trauma to the base of the 2nd metacarpal, the appropriate mechanism of injury, or persistent pain after a period of rest and splinting that this fracture be suspected and sought after.

Conflict of interest None.

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