

## A VARIANT OF THE DISTAL ULNA IN A PATIENT WITH ULNAR IMPACTION SYNDROME

Diogo Casal<sup>\*,\*\*</sup>, Alexandra Borges<sup>\*\*\*</sup>, Diogo Pais<sup>\*\*</sup>, Maria Angélica-Almeida<sup>\*</sup>, João Goyri-O'Neill<sup>\*</sup>

A 42-year-old man, working as a carpenter, was seen in the Clinic for the insidious onset in the previous three months of pain in the ulnar side of his right wrist (dominant hand). The pain was exacerbated by his working activities, namely using the hammer and grasping heavy objects. Rest and avoidance of these activities caused the pain to subside. He denied any previous significant trauma to that region. The medical history was otherwise noncontributory. Physical examination revealed pain on palpation of the distal portion of the ulna, as well as limitation of ulnar deviation of the wrist against resistance, due to complaints of pain. Pain was also elicited by asking the patient to firmly clasp his hand, and when pressure was exerted from proximal to distal against his clenched fist.

Radiographs of the right wrist didn't show any significant pathological changes. However, an anatomical variant of the distal portion of the ulna was observed with a prominent ulnar styloid in an ulnar negative wrist being apparent (Figures 1A and B). This gave the distal ulna a bifid appearance. Ultrasonography revealed only moderate and unspecific swelling in the medial structures of the wrist. A presumptive diagnosis of ulnar impaction syndrome was made, and the patient was treated conservatively with a wrist splint and analgesics for 4 weeks. The symptoms gradually subsided and 6 weeks after the first consultation the patient resumed his work by his own initiative. He refused to have an MRI of his wrist done, as well as any other diagnostic tests, claiming that he felt better.

The ulnar impaction syndrome is thought to be caused by the impaction of the ulnar head against the triangular fibrocartilage complex and ulnar carpus, provoking excessive load bearing across these structures and resulting in their progressive dege-

neration<sup>1</sup>. It is most commonly associated with people whose daily activities cause excessive intermittent loading of the ulnar carpus, as in this patient, who worked as a carpenter<sup>2</sup>. The clinical hallmark of this syndrome consists of chronic or subacute ulnar wrist pain, often exacerbated by activity and relieved by rest. Swelling and limitation of forearm rotation and wrist motion are frequent concurrent complaints<sup>2</sup>. The differential diagnosis must include senescent changes, intraosseous ganglia, true cysts, vascular grooves, Kienböck disease, and the lunula accessory ossicle that, sometimes, can be partially or completely fused with the styloid process<sup>1-3</sup>.

Several anatomical variants of the ulna have been associated with an increased incidence of ulnar wrist pain syndromes, namely: significant ulnar positive variance and ulnar impaction syndrome; an excessively long or prominent ulnar styloid and ulnar styloid impaction syndrome; ulnar negative variance and Kienböck disease, and, in extreme cases, ulnar impingement syndrome. The va-



**Figure 1.** Antero-posterior and lateral right wrist radiographs (Figures A and B, respectively) depicting a variant of the distal ulna in a patient with a clinically ulnar impaction syndrome. A prominent ulnar styloid in an ulnar negative wrist is observed, giving a bifid appearance to the distal ulna.

\*Plastic and Reconstructive Surgery Department, São José Hospital

\*\*Anatomy Department, Medical Sciences Faculty, New University of Lisbon

\*\*\*Radiology Department, Portuguese Institute of Oncology of Lisbon, Lisbon, Portugal

riant described in this patient, by increasing load bearing across the ulnar portion of the wrist, could also be a predisposing factor for the development of ulnar impaction syndrome<sup>1-2, 4</sup>.

Although the authors couldn't determine the frequency of this variant in the general population, they believe it is rare, as it is not mentioned in the literature review the authors conducted, including the works of Schuind et al. and Hyams et al., who reviewed wrist radiographs of 120 and 51 normal adults, respectively<sup>5-6</sup>, and the work of Timins, who reviewed 208 MRI wrist studies with normal variants<sup>3</sup>.

#### Correspondence to

Diogo Casal  
Rua Luís Pastor de Macedo, N 32, 5D,  
1750-159,  
Lisbon, Portugal  
E-mail: diogo\_bogalhao@yahoo.co.uk

#### References

1. Friedman SL, Palmer AK. The ulnar impaction syndrome. *Hand Clin* 1991;7: 295-310.
2. Cerezal L, del Pinal F, Abascal F, Garcia-Valtuille R, Pareda T, Canga A. Imaging findings in ulnar-sided wrist impaction syndromes. *Radiographics* 2002;22: 105-121.
3. Timins ME. Osseous anatomic variants of the wrist: findings on MR imaging. *AJR Am J Roentgenol* 1999;173: 339-344.
4. Mellado JM, Calmet J, Domenech S, Sauri A. Clinically significant skeletal variations of the shoulder and the wrist: role of MR imaging. *Eur Radiol* 2003;13:1735-1743.
5. Hyams E, Yazaki N, Nakamura R, Nakao E, Watanabe K. Radiographic morphology of the ulnar head. *Hand Surg* 2004;9:175-180.
6. Schuind FA, Linscheid RL, An KN, Chao EY. A normal data base of posteroanterior roentgenographic measurements of the wrist. *J Bone Joint Surg Am* 1992;74:1418-1429.