

ORIGINAL ARTICLE

Solitary osteochondroma in the pisiform bone with pisotriquetral osteoarthritis. A case study[☆]



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KEYWORDS

Osteochondroma;
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Abstract Osteochondroma is the most common bone tumour and the most common site the long bones. However, cases have been described in the scaphoid, large bone, lunate, trapezium and trapezoid that can be a cause of pain in the hand and wrist. They can occur concomitantly with other traumatic or degenerative processes or generate complications in adjacent structures. Below we present an osteochondroma in the pisiform bone associated with pisotriquetral osteoarthritis.

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PALABRAS CLAVE

Osteochondroma;
Pisotriquetral joint;
Osteoarthritis;
Pisiform

Osteocondroma solitario en el hueso pisiforme con artrosis piso-piramidal. A propósito de un caso

Resumen El osteocondroma es el tumor óseo más común siendo la localización más frecuente en huesos largos. Sin embargo existen casos descritos en el escafoides, hueso grande, semilunar, trapecio y trapecioide que pueden ser una de las causas de dolor en mano y muñeca. Pueden darse de forma concomitante con otros procesos traumáticos o degenerativos o generar complicaciones en las estructuras contiguas. A continuación presentamos un osteocondroma en el pisiforme asociado a una artrosis piso-piramidal.

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Introduction and objective

Osteochondromas are the most common bone tumours. Their incidence stands at 35%, although this figure is an under-estimate, given that these tumours have few clinical symptoms.¹ Osteochondromas are benign tumours which originate in the cartilage, and they are usually located in the

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Fig. 1 A) Simple X-ray image. Exophytic image with continuity with adjacent bone cortex with a broad base at the level of the pisiform. B-C) Magnetic resonance image of the carpus. Solitary osteochondroma pediculated in the pisiform, an exophytic lesion with corticomedullary continuity in the proximal pole measuring 5×5 mm surrounded by synovial fluid with correct tendinous and ligament structures.

proximal humerus, distal femur or tibia, while the carpus is an extremely rare location.¹ Few cases have been described to date in the scaphoids,^{2,3} capitate bone,^{4,5} semilunar,⁶ trapezium⁷ and trapezoid bones.⁸ We present the case of a solitary osteochondroma in the pisiform bone associated with pisotriquetral osteoarthritis.

Clinical case

A 55 year-old patient who consulted due to a mistaken movement while doing the housework, after which she had persistent pain in the cubital zone of the wrist and right hand, which sometimes involved paraesthesia in this area. Although no inflammation or swelling was found during examination, passive mobility was restricted in extension, with pain on palpation of the pisiform bone, with a positive Tinel sign. An X-ray image was taken, (Fig. 1) together with an ultrasound scan that informed of possible osteochondroma of the pisiform bone with a large amount of peripheral liquid and signs of synovitis.

The diagnosis was confirmed by magnetic resonance imaging (Fig. 1). The electromyogram showed that there were no signs of compression in the cubital nerve at the level of the ulnar tunnel, although it may have been irritated without neurophysiological signs of this.

Computed tomographic imaging showed pisotriquetral arthrosis (Fig. 2) and the patient was operated through a

radial approach to the ulnar tunnel, with exeresis of the pisiform bone and the osteochondroma (Fig. 2). Anatomical pathology reported that there was a nodular irregular fragment measuring 2×1.2 cm across its longest axes. It was processed after decalcification with haematoxylin-eosin stain, concluding with a diagnosis of osteochondroma.

Results

The patient currently has no pain in the hypothenar zone and is able to undertake housework as well as her usual work.

Discussion

Pain in the cubital zone of the wrist is a frequent symptom and a challenge for evaluation and diagnosis by hand surgeons. Differential diagnosis should be performed between tenosynovitis of the *flexor* and *cubital extensor of the carpus*, lesion of the *lunotriquetral*, *pisohamate* or *pisometacarpal ligament*, lesion of the triangular fibrocartilage, compression of the cubital nerve in the ulnar tunnel⁹ as well as lesions with a traumatic origin, carpal arthropathologies, pisotriquetral dysfunction¹⁰ or tumours.

Osteochondroma is a benign tumour or exostosis that may be solitary or multiple. The first diagnostic test to be performed is usually X-ray imaging,¹ although it may go undetected and require study using magnetic resonance

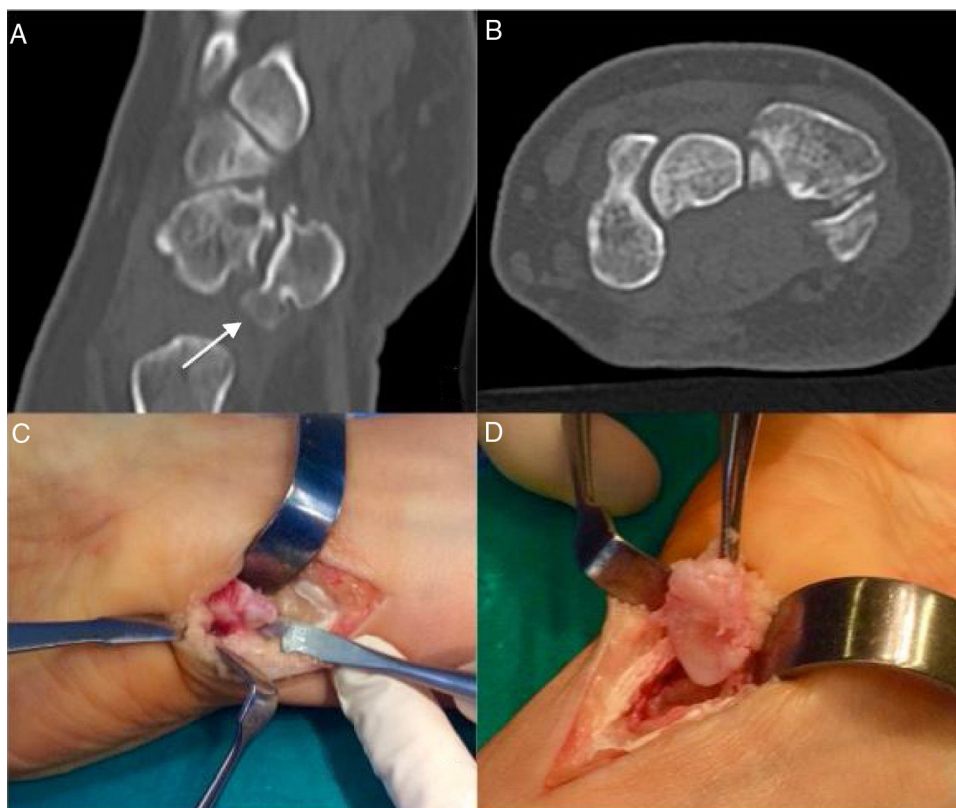


Fig. 2 A-B) Computed tomography of the carpus. Proximal exostosis of the pisiform may be seen with pisotriquetral joint arthrosis with a free body in the distal joint interline at the left. C-D) Surgical specimen. Image C shows the volar face of the pisiform bone with exostosis in the inferior pole; image D shows the dorsal face of the same.

imaging. The treatment of choice, if symptoms consist of moderate persistent pain, is to perform an exeresis of the lesion.^{4,8,9} If the lesion is large then it may cause complications such as tearing of the cubital carpal flexor⁴ associated with episodes of persistent pain^{3,4} or arthrosis of the adjacent joints.¹⁰

Pisotriquetral arthrosis is the second most common from in the carpus.¹⁰ Dysfunction of this joint usually involves synovitis with distension of the joint recesses and osteophytes visualised by ultrasound scan and/or magnetic resonance imaging.⁹ Synovitis in this joint may be associated with chondrocalcinosis deposits. Exeresis of the pisiform bone is the indicated treatment.¹⁰

Conclusion

No other cases have yet been published of solitary osteochondroma in the pisiform bone with concomitant pisotriquetral arthrosis. As both entities presented at the same time, the proposed treatment to revolve the symptoms is exeresis of the pisiform bone or pisiformectomy.

Level of evidence

Level of evidence V

Financing

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Conflict of interests

The authors have no conflict of interests to declare.

References

1. Cañete PM, Fontoira ME, Gutiérrez San José B, Mancheva MS. Osteochondroma: diagnóstico radiológico, complicaciones y variantes. *Rev Chil Radiol.* 2013;19:73–81, <http://dx.doi.org/10.4067/S0717-93082013000200006>.
2. van Alphen JC, te Slaa RL, Eulderink F, Obermann WR. Solitary osteochondroma of the scaphoid: a case report. *J Hand Surg Am.* 1996;21:423–5, [http://dx.doi.org/10.1016/S0363-5023\(96\)80356-X](http://dx.doi.org/10.1016/S0363-5023(96)80356-X).
3. Uchida K, Kobayashi S, Takamura T, Yayama T, Inukai T, Baba H. Osteochondroma arising from the scaphoid. *J Orthop Sci.* 2007;12:381–4, <http://dx.doi.org/10.1007/s00776-007-1134-1>.
4. Shah NR, Wilczynski M, Gelberman R. Osteochondroma of the capitate causing rupture of the extensor digiti minimi: case report. *J Hand Surg.* 2009;34:46–8, <http://dx.doi.org/10.1016/j.jhsa.2008.08.004>.
5. Laliotis NA, Crysanthou CK, Konstantinidis PA. Solitary osteochondroma of the capitate, in a child. *J Clin*

- Orthop Trauma. 2018;9:S136–9, <http://dx.doi.org/10.1016/j.jcot.2018.01.005>.
6. Takagi T, Matsumura T, Shiraishi T. Lunate osteochondroma: a case report. J Hand Surg Am. 2005;30:693–5, <http://dx.doi.org/10.1016/j.jhsa.2005.05.001>.
 7. Koshi H, Shinozaki T, Hosokawa T, Yanagawa T, Takagishi K. Solitary osteochondroma of the trapezium: case report. J Hand Surg Am. 2011;36:428–31, <http://dx.doi.org/10.1016/j.jhsa.2010.12.005>.
 8. Baumann A, Pereira D, Baldwin K, Weusten A. Solitary osteochondroma of the trapezoid disguised as a tooth fragment. BMJ Case Rep. 2015, bcr2015210884. <https://doi.org/10.1136/bcr-2015-210884>.
 9. Vezeridis PS, Yoshioka H, Han R, Blazar P. Ulnar-sided wrist pain. Part I: anatomy and physical examination. Skeletal Radiol. 2010;39:733–45, <http://dx.doi.org/10.1007/s00256-009-0775-x>.
 10. Moraux A, Lefebvre G, Pansini V, Aucourt J, Vandebussche L, Demondion X, et al. Pisotriquetral joint disorders: an under-recognized cause of ulnar side wrist pain. Skeletal Radiol. 2014;43:761–73, <http://dx.doi.org/10.1007/s00256-014-1848-z>.