



Clinical rheumatology in images

Right elbow pain and inflammation in a 55 year-old woman

Mujer de 55 años con dolor e inflamación de codo derecho

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Clinical case

A 55-year-old woman with no history of interest was seen because of mechanical pain of the right elbow lasting for 6 years, accompanied by swelling and paresthesias of the 4th and 5th fingers. Upon examination, the right hand had the appearance of a claw due to deformity and there was swelling of the right elbow as well as limitation for flexion to 130°. She presented hypoesthesia of the 4th and 5th fingers of the right hand, but sensitivity to pain and temperature was normal. All laboratory tests were normal. Synovial fluid culture and cytology were negative, ruling out an infectious or tumoral cause. No crystals were observed through the microscope. Synovial biopsy showed chronic, non-specific synovitis. The right elbow x-ray (Figure 1), showed joint destruction with erosions, sclerotic changes, and joint impingement. The magnetic resonance (MR) of the elbow (Figure 2), showed a loss of structure with osteochondral destruction, joint capsule distension, and osteochondromatosis. The electromyogram showed signs of partial axonal lesion of the right ulnar nerve at the elbow, with an important intensity.

Diagnosis and progression

Faced with the presence of a destructive arthropathy of the elbow, without a history of infection, we suspected a neuropathic arthropathy. Therefore, we performed a cervical RM (Figure 3), which showed a centromedullar cystic cavity compatible with syringomyelia, and a Chiari type I malformation. The diagnosis was that of a neuropathic arthropathy due to syringomyelia. The patient underwent the collocation of a total elbow prosthesis and the liberation of the ulnar nerve, with a good progression after 4 years (Figure 4). With respect to the syringomyelia, a conservative approach was opted for.



Figure 1. Anteroposterior and lateral x-ray of the right elbow. Joint destruction with erosions of the humerus as well as periarticular sclerosis, advanced osteochondromatosis, and joint impingement can be seen.



Figure 2. Magnetic resonance of the right elbow in the sagittal plane T1 (A) and with gadolinium (B). Marked joint loss of structure and osteochondral destruction as well as bone irregularities, cysts, and osteophytes can be seen. There is joint capsule distension due to the synovial effusion and very advanced osteochondromatosis.

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Figure 3. Cervical magnetic resonance in the sagittal plane T2. The existence of a cystic, centromedullar, and moderately dilated lesion compatible with hydro-syringomyelia can be seen (arrow) as well as a descent of the cerebella amygdale with a peak-type malformation belonging to Chiari type I.



Figure 4. Anteroposterior and lateral x-ray of the right elbow (after 4 years since surgery). Prosthetic material can be seen in the right elbow.

Discussion

Syringomyelia is characterized by a central cystic cavitation of the spinal cord, more frequently found in the cervical area. Twenty percent to fifty percent of those affected present neuropathic arthropathy, a larger percentage than in diabetics (1%) or syphilitic tabes (5%–10%). Neuropathic arthropathy is a type of bone affection characterized by important destruction, associated to the loss of proprioception of the

joint. The most frequent localization is the glenohumeral joint,^{1–3} and with less frequency, the elbow.⁴

Usual presentation is chronic and progressive monoarthritis. Radiographic changes are fundamental for diagnosis and are observed after 2–4 weeks. The association of neuropathic joint disease and a lesion of the ulnar nerve has been described,⁵ making it necessary to perform an electromyogram. In our case, the cause of the ulnar neuropathy was the compression of the ulnar nerve by the joint bone hypertrophy, because the electromyographic findings were different.

It is important to perform the differential diagnosis with bone and synovium tumors and septic arthritis. The definitive diagnosis is based on the neurological examination and a MR of the spine and posterior fossa.

Treatment consists in immobilization with splints.⁴ Neuropathic arthropathy has been treated with pamidronate^{6–8} and alendronate,⁹ with which a partial clinical improvement can be seen. If bone destruction is not important, arthrodesis of the lower extremities can be attempted.^{6–8,10} An option could be arthroplasty, but some authors^{4,10} contraindicate it due to the existing instability; however, other have used it successfully in the shoulder¹¹ and, less frequently, in the elbow.¹² Our patient would constitute the first case of neuropathic elbow arthropathy with a satisfactory progression 4 years after surgery with total arthroplasty.

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