

# A giant lipoma of the forearm as a rare cause of posterior interosseous nerve syndrome



Centro Hospitalar  
de Entre o Douro e Vouga, E.P.E.  
Portugal

Alexandre Castro, Raquel Lima Cunha, Marta Santos Silva, Vera Resende, Artur Neto

## Background

Posterior interosseous nerve syndrome is a rare compressive neuropathy of the upper limb. The posterior interosseous nerve is a branch of the radial nerve that provides motor innervation to the muscles in the posterior (extensor) compartment of the forearm. This syndrome can be caused by traumatic injury, tumors, iatrogenesis or others. Compression of the posterior interosseous nerve (PIN) by a tumor is a rare form of this syndrome.

## Case Presentation

An 81-year-old male was referred for consultation because of a 2-year history of dorsal pain in the right forearm with inability to extend the thumb, index finger and, to a lesser extent, the remaining fingers and wrist. He had no sensory deficits in any of the dermatomes of the hand or forearm. Physical examination demonstrated a palpable mass in the proximal forearm. Electromyography confirmed severe posterior interosseous nerve neuropathy. Magnetic resonance imaging revealed a well-defined, encapsulated, fat-density lesion, measuring 8.3 x 3 x 1 cm in its greatest diameter, with atrophy of the extensor muscles. He underwent surgical exploration, lesion excision and PIN decompression.

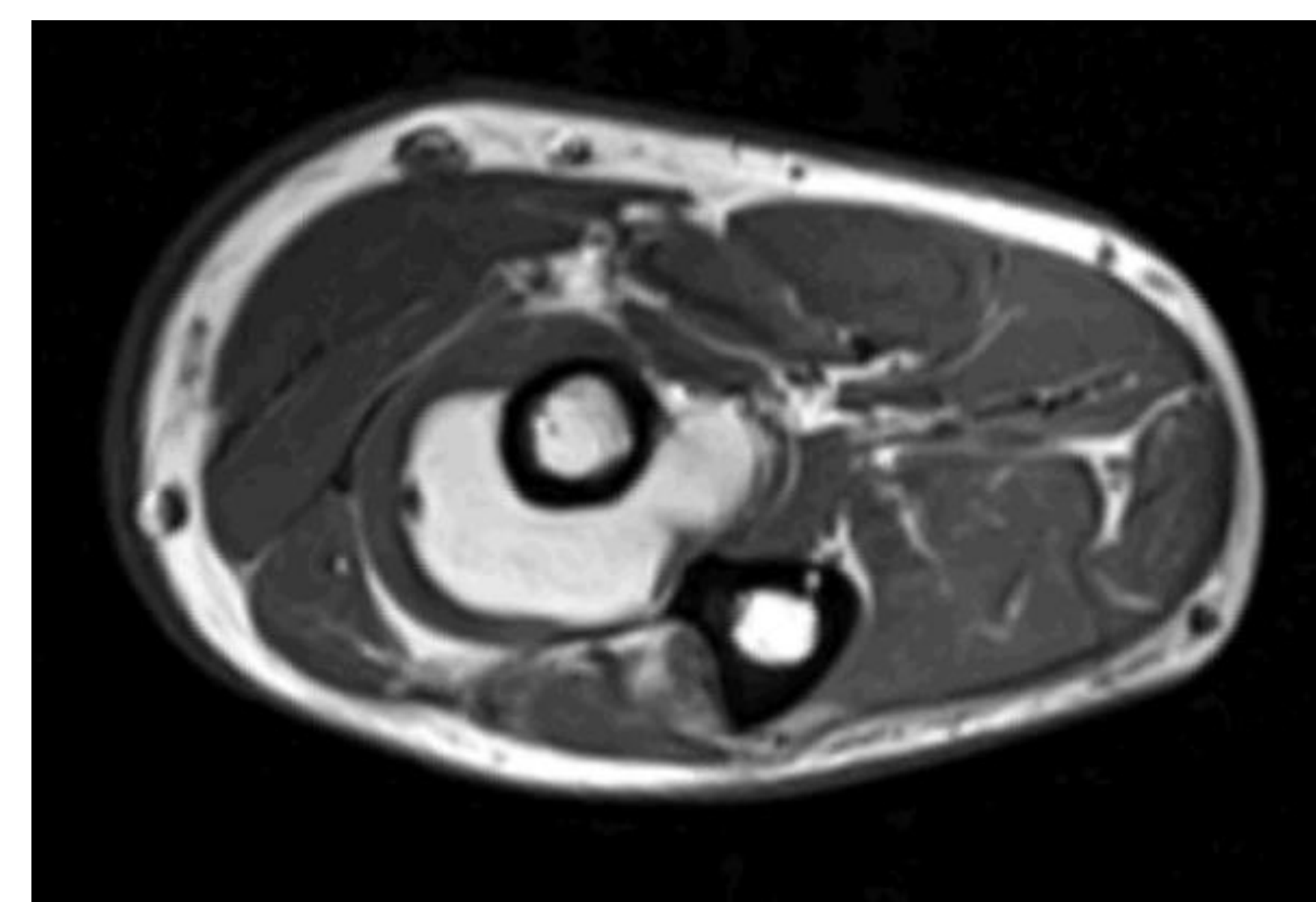
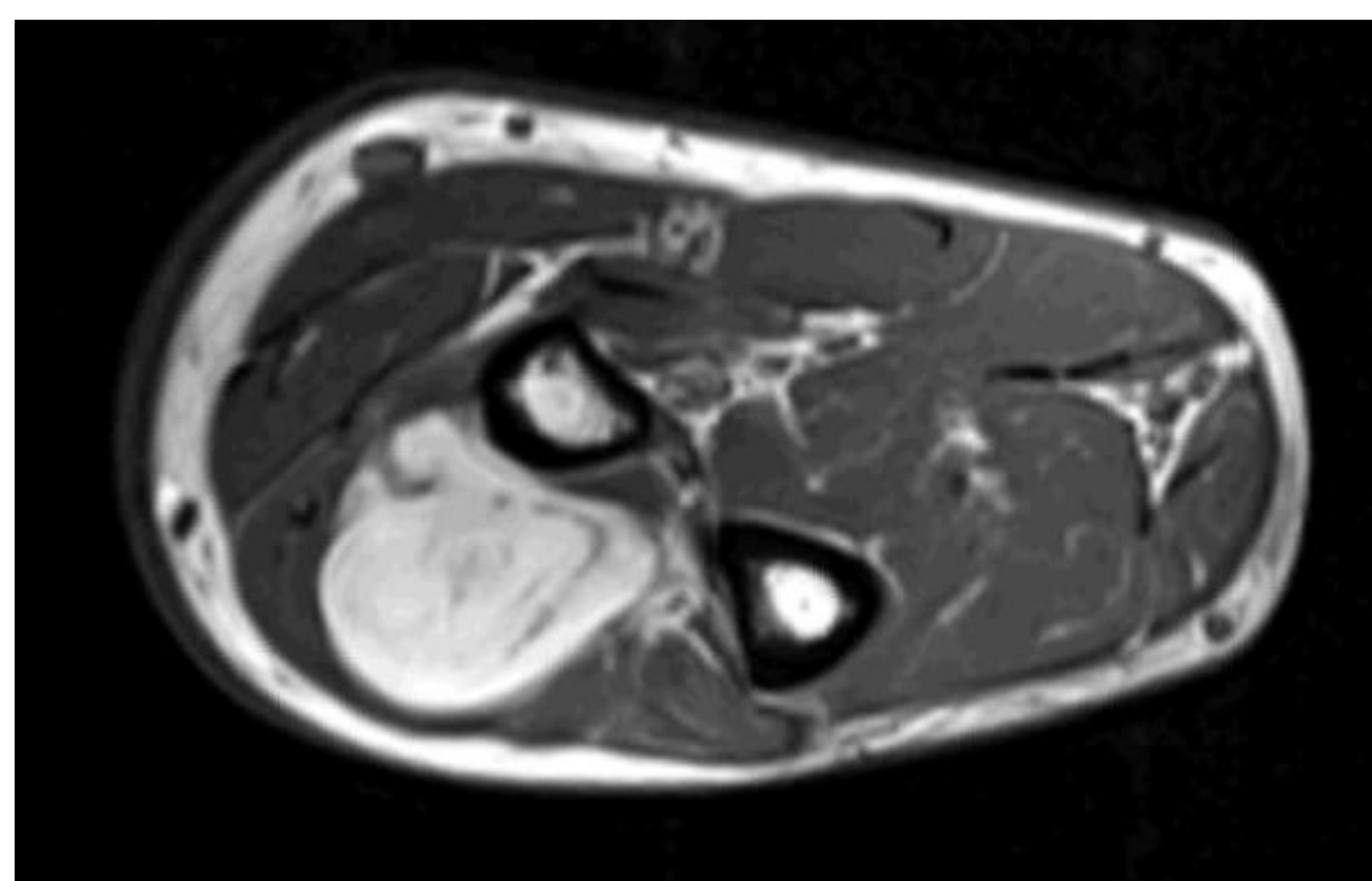
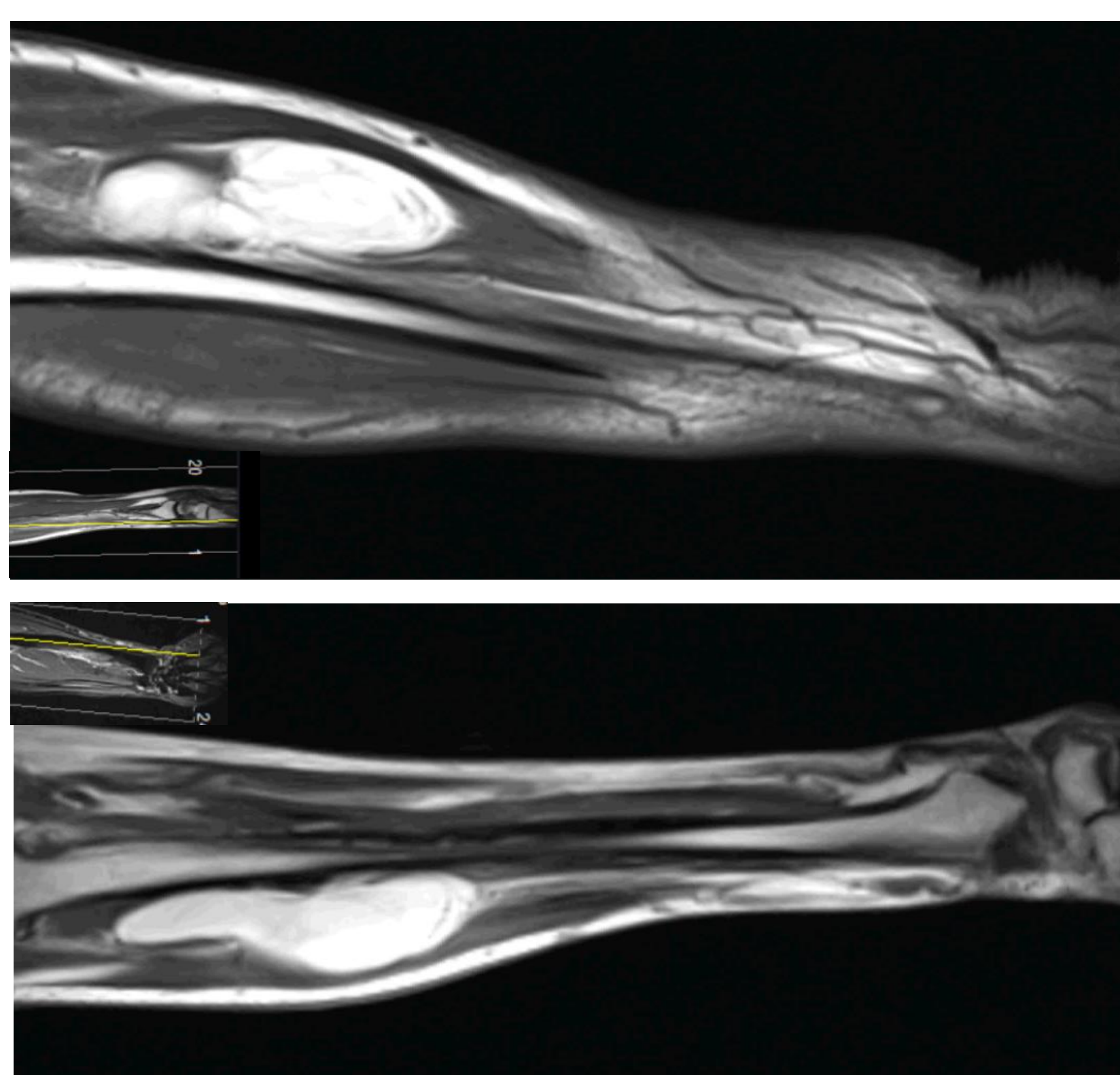


Fig.1 (MRI): Coronal, sagittal and axial views of the proximal forearm.

## Results

On exploration, there was no macroscopic lesion of the nerve, which remained intact but bruised.

Histopathology confirmed the diagnosis of lipoma.

After the surgery, he underwent a rehabilitation protocol that, after 6 months, he maintains. He remains without sensory deficits but there has been no improvement in motor deficits.



Fig.1 (MRI): Surgical dissection of the lipoma. Posterior interosseous nerve identified.

## Discussion

Although rare, we must include the uncommon cause of tumors and tumor lesions in the differential diagnosis of posterior interosseous nerve syndrome. In addition, the presence of a palpable mass on the forearm determines the need for imaging tests to determine the extent and location of the tumor, as well as its typology and aggressiveness. It also allows us to assess the degree of chronicity and muscle tone of the extensor muscles. The integration of clinical history and auxiliary diagnostic tests determine our therapeutic and surgical approach. The prognosis after surgery depends on the duration of symptoms, and in long-term paralysis, symptoms are less likely to revert.

## Conclusions

Atraumatic posterior interosseous nerve syndrome requires a clinical evaluation and integration with auxiliary diagnostic tests to allow its diagnosis and treatment. In cases of tumor lesions, in almost all situations, these involve their excision.