Ulnar Neuritis

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History

8 year old with history of lateral condyle fracture two years ago. Presents with a cubitus varus derormity and new onset of tingling pain in the elbow.

Diagnosis

Ulnar neuritis

Discussion

Peripheral neuropathies may be categorized according to cause, as either entrapment or non-entrapment neuropathies. Entrapment neuropathies (also referred to as nerve compression syndromes) of the median, radial, and ulnar nerves are characterized by alterations of the nerve function that are caused by mechanical or dynamic compression. Nerve entrapment syndromes occur because of anatomic constraints at specific locations. Anatomic locations that are prone to nerve entrapment syndromes include sites where the nerve courses through fibro-osseous or fibromuscular tunnels or penetrates a muscle.

Findings in patients with nonentrapment neuropathies may include traumatic nerve injuries, inflammatory conditions, polyneuropathies, and mass lesions at anatomic locations where entrapment does not typically occur.

A normal nerve on T1-weighted images appears as a smooth round or ovoid structure with an MR signal that is isointense to adjacent muscle. Normal nerves do not appear enhanced after the intravenous administration of a gadolinium-based contrast agent. The MR signal in normal peripheral nerves on T2-weighted images acquired with fast SE or short inversion time inversion recovery (STIR) sequences is isointense to mildly hyperintense, compared with the signal intensity in normal muscle. Within the cubital tunnel, the normal ulnar nerve is most visible posterior to the medial epicondyle on axial T1-weighted MR images, on which it appears as a round hypointense structure surrounded by fat. In patients with cubital tunnel syndrome, the nerve may appear with increased signal intensity on images acquired with T2-weighted or STIR sequences.

In the presence of nerve entrapment, MR images may depict osteoarthritis, synovitis, bone and muscle anomalies, or masses as the cause of the syndrome. MR imaging findings indicative of ulnar muscle denervation include edema or fatty atrophy of the flexor digitorum profundus, flexor carpi ulnaris, and any of the ulnar intrinsic muscles of the hand.

Findings

Mild enlargement and increased signal edema of the ulnar nerve in and above the cubital tunnel. Normal muscle signal and size.

Reference

September 2006 RadioGraphics, 26, 1267-1287.


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