FIBROLIPOMATOUS INFILTRATION OF THE MEDIAN NERVE

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ABSTRACT

A case of fibrolipomatous infiltration of the median nerve is presented. A male patient, 19 year-old presented with a mass at his left thumb and palm with gradual enlargement for 5 years. He had numbness of the hand while playing his guitar.

On physical examination, the mass was soft, had an ill-defined border and covered with normal skin. The provisional diagnosis was hemangioma.

Imaging studies including plain film and MRI with MRA which showed an enlarged median nerve with fibrolipomatous infiltration (hamartoma). No soft tissue calcification or abnormal vasculature was seen, so a hemangioma was excluded. Surgery was done to release a "carpal tunnel syndrome" and a biopsy was taken. The histologic diagnosis was compatible with the MRI study.

This is a rare benign lesion. The diagnosis is easy and made possible by MRI imaging and eliminates an invasive angiogram study. We present a case of fibrolipomatous infiltration of the median nerve with a characteristic MRI finding.

Key Words: Fibrolipomatous infiltration, Hamartoma, Median nerve.

INTRODUCTION

Fibrolipomatous infiltration of the median nerve is a rare benign condition. It is a hamartoma. It is easily diagnosed by MRI imaging which shows characteristic finding.

CASE REPORT

A 19 year-old man presented with a mass along the thenar eminence of the left palm and thumb region for 5 years. This was gradually and slowly enlarging. While playing the guitar, he felt numbness of his palm, which subsided after he stop playing. No history of trauma and no skin lesions were noted.

On physical examination ; a palpable subcutaneous mass, soft consistency, with an ill-defined border, filling the mid palm extending from the wrist joint to ulnar side of thumb was detected. Tinel sign was positive at the wrist joint. The covering skin was normal. No signs of inflammation were evident.

IMAGING STUDIES

Plain film of the left hand showed a soft

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tissue density mass lesion without calcification at thenar region (Fig 1 a, b). Otherwise normal bony structures were observed.

MRI imaging (Fig 2, 3) was requested to rule out hemangioma.

It demonstrates a markedly enlarged median nerve (arrows) with heterogeneous signal intensity consisting of tubes of signal void (nerve fascicles and epi-and perineural fibrosis) and fat signal.

Fig 1A, 1B Plain films of left hand in PA and oblique view showed a mass lesion of soft tissue density without calcification in the thenar region (straight arrows) and thumb (curve arrow).

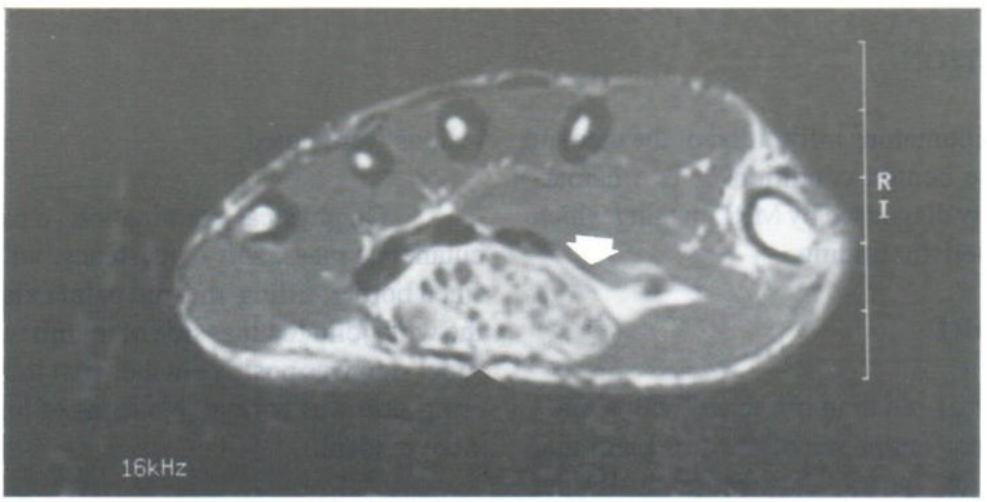

Fig. 2 Transverse T1W spin echo MR image (TR/TE : 800/21) obtained at the level of carpal tunnel revealing a large mass (arrow) in the median nerve that crowded the flexor tendons dorsally.

Fig. 3 Coronal T1W spin echo MR image showed longitudinal cylindrical regions of low signal (nerve fascicles) interspersed with high signal intensity (fat) in the volar aspect of hand and wrist.

DIAGNOSIS

Fibrolipomatous infiltration of the median nerve.

He was operated to release the carpal tunnel syndrome by flexor retinaculum lysis and a biopsy was taken. Post operative course was uneventful. Pathological diagnosis was compatible with MRI findings.

DISCUSSION

Fibrolipomatous infiltration of the nerve (hamartoma) is a rare benign lesion that involves the median nerve in 80% of cases.[1-6] Tumor involvement of the ulnar and radial nerves and dorsum of the foot has been reported.[1,3,5,7] This entity is most commonly encountered in infants and less commonly in children and young adults.[1,6] Early signs and symptoms are often absent or minimal. Later findings of nerve compression are evident, with pain, motor deficit, and paresthesia[1] alone. With involvement of the median nerve, signs and symptoms of carpal tunnel syndrome may be evident. Macrodactyly of the involved body part may be present in nearly two-thirds of cases.[1,3,5]

The tumor is seen as a rubbery, yellowish tan mass within the nerve sheath. Characteristic histologic findings include abundant perineural and epineural fibrosis and infiltration of mature fat cells in the inter-fascicular connective tissue.[1] Atrophy of nerve fibers has been reported as a late finding. The tumor demonstrates a characteristic appearance on MRI.[1,2] The longitudinally oriented cylindric regions of signal void seen on all pulse sequences are thought to represent the nerve fascicles and accompanying epineural and perineural fibrosis. Between these structures are areas of high signal on T1-weighted spin-echo images reflective of infiltrating mature fat cells in the interfascicular connective tissue.

The differential diagnosis of this entity includes intraneural lipoma, ganglion cyst, traumatic neuroma, and vascular malformations in which the signal voids on MRI could potentially

mimic the appearance of the signal voids in fibrolipomatous hamartoma.[1] Treatment most frequently includes exploration, biopsy, and carpal tunnel release.[1,3,4,6] Surgical excision of the primary lesion is controversial, with both satisfactory results and significant neurologic complications reported.

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