

A Rare Cause of Median Nerve Entrapment Neuropathy: Carpal Lipoma

Median Sinir Tuzaklanması ile Gelen Olguda Nadir Bir Kitleli Lezyon:

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Özet

Lipomlar sık görülen benign yumuşak doku tümörlerinden olup vücutta değişik anatomik bölgelerde karşımıza çıkabilmekte birlikte elde görülmesi oldukça nadirdir. Farklı boyutlarda karşımıza çıkabilen bu lezyonlar buldukları anatomik bölgede yaptığı kitle etkisine bağlı olarak çeşitli komplikasyonlara ve klinik semptomlara neden olabilmektedir. Özellikle el bölgesinde yerleşim göstermiş ise median sinirle olan komşuluğu ya da sinire yaptığı baskı etkisi nedeni ile karpal tünel sendromu (KTS) bulgularına neden olabilmektedir. Bu yazıda, KTS semptomları ile gelen ve karpal tünelde değil de distalinde yerleşim göstermesine karşın median sinir tuzaklanmasına neden olan lipom olgusu tartışılacaktır.

Anahtar kelimeler: *Karpal tünel, Lipom, MR*

Abstract

Lipomas are common benign soft tissue tumors and may appear in different anatomical regions of the body. They are rarely seen in the hand. These lesions, in varying sizes, can cause some complications and clinical symptoms depending on the mass effect on the anatomic region. Especially lesions in the hand, can cause carpal tunnel syndrome (CTS), due to the proximity to the median nerve or to compression effect. In this article, the lipoma causing median nerve entrapment will be discussed, although it is not located just in the carpal tunnel but distally.

Keywords: *Carpal tunnel, Lipoma, MRI*

Introduction

Carpal tunnel syndrome is the most common entrapment neuropathy in the community which is caused by the compression of the median nerve for a variety of reasons. Due to the mass effect, intraneural blood flow is impaired and loss of function occurs in the nerve².

Lipomas are common benign soft tissue tumors and may appear in different anatomical regions of the body. They are rarely seen in the hand¹. These lesions, in varying sizes, can cause some complications and clinical symptoms depending on the mass effect in the anatomic region. Especially lesions in the hand, can cause carpal tunnel syndrome (CTS), due to the proximity to the median nerve or to compression effect. In this article, the lipoma causing median nerve entrapment will be discussed, although it is not located just in the carpal tunnel but distally.

Case Report

A 75-year-old female patient presented to the orthopedic clinic with a right hand palmar mass and median nerve entrapment clinical symptoms. In clinical examination, findings indicated CTS and so electromyography (EMG) was planned to verify the diagnosis. However, the electrophysiological tests suggested CTS, because of fullness appearance in the volar side of the hand, patient went on further examination. As known, the magnetic resonance imaging (MRI) is the modality of choice in soft tissue lesions. This method was preferred after EMG. On MRI, at the third and fourth metacarpal levels, there was a mass expanding to the carpal tunnel, with the dimensions of about 3x3x4 cm and displacing the tendons of the flexor group on the palmar side of the hand. The signal

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intensity of the lesion was high on T1 and T2 weighted images, and low on fat saturation sequences. Also, the lesion had no pathological enhancement, indicating no malignancies. Also, the signal changes were similar to that subcutaneous adipose tissue and had no contrast fixation. (Figure 1) Among the benign lesions, lipoma was thought as an initial diagnosis. In the tunnel the median nerve could not be seen as an isolated structure and in the differential diagnosis neural lipoma also was considered. For the exact diagnosis, the patient went on surgical management and lipoid mass was extracted from inter and peritendinous side carefully in order not to cause any tendinopathy or even neuropathy. Also, median nerve was seen above the mass after excision. (Figure 2) The histopathologic evaluation obtained after surgical intervention was compatible with lipoma.

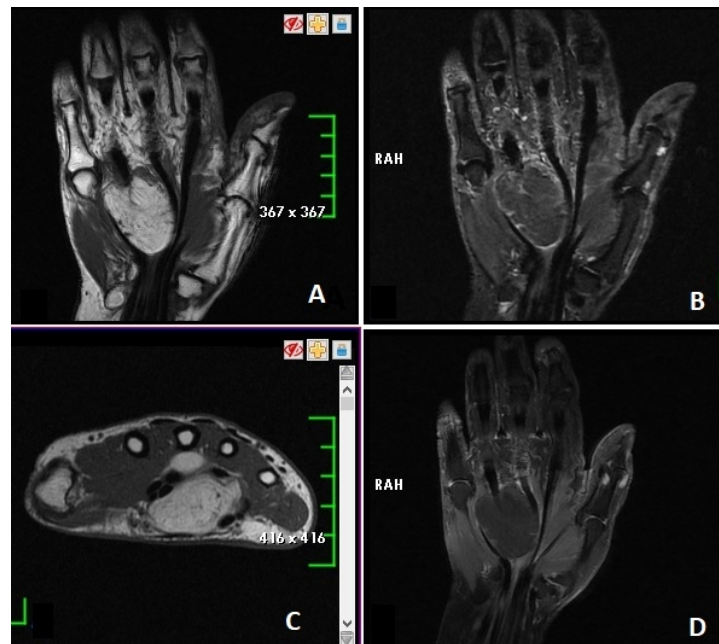


Figure 1
Electromyography

Case Discussion

CTS is the most common entrapment neuropathy of the upper extremity, often seen between the ages of 36-60 years and mostly in females ¹ and can have different causes in the etiology. Although, it can be seen as idiopathic, as a secondary, structural disorders, tenosynovial pathologies, obesity, haematoma, neural hypertrophy, space occupying lesions, etc. can result in CTS ².

Soft tissue lipomas are well-defined benign tumors arising from the adipose cells. They may be located in subcutaneous tissue, subfascial and intermuscular distances. Superficial subcutaneous lipomas are visually lobule-like masses and usually do not cause obvious symptoms. Deeply located lipomas can be observed under the fascia or within the intermuscular planes and may cause extrinsic compression effect on the neuronal structure, as well as loss of hand function ¹.

However, mass lesions in the hand can cause CTS ³, lipomas are very rare lesions ⁴ and can lead to symptoms of entrapment neuropathy, particularly in the carpal tunnel or near it, by compression of median nerve. Symptoms become more prominent in patients with clinically improved numbness in the hands and increased pain at night with increased pressure in tunnel with wrist movements. Clinically, it can be diagnosed by Tinel and Phalen tests, together with atrophy in the thenar region ². Besides clinical diagnosis, EMG is also quite useful in confirming this entity and can help in differential diagnosis about radiculopathy or peripheral polyneuropathy ^{5,6}.

In patients with CTS, however initial diagnosis could be made by radiological imaging, biopsy after surgical exploration is needed for the exact diagnosis⁷.

In our case with median nerve entrapment symptoms, clinical and examination findings as well as electrophysiological tests supported CTS and radiological examinations revealed etiology. Particularly, MRI detailing both structural and morphological features of the mass lesion and relation of the neighbouring tissues, gave guidance for the surgical intervention, also.

In treatment of these patients, endoscopic or minimally invasive surgical methods are preferred. However, if there is a mass lesion, there is usually no significant regression in the symptoms unless the lesion is removed surgically and a transvers carpal ligamentectomy is performed¹ in order to relieve the median nerve and surrounding anatomical structures.

MRI is a superior imaging modality for soft tissue evaluation, can also help the differential diagnosis of mass lesions that may cause CTS, and also demonstrate lesion characteristics and the relationship between the mass and the adjacent anatomic structures detailly, thus contributing to the highlighting the symptomatology as well as to the management of the surgical treatment.

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Information Presentation

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