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Unusual Case of Carpal Tunnel Syndrome Secondary to a Lipoma of the Hand

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Case Report

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Abstract: The carpal tunnel syndrome is the result of the median nerve compression most often of primitive origin; it is rarely secondary to a soft parts tumor of the hand, especially to lipomas. The aim of this study is to evaluate the rarity of a median nerve compression by a lipoma and to highlight its diagnostic difficulty. This study reports a case of carpal tunnel syndrome secondary to lipoma. This is a young woman aged 35 years old with a location on the palmar surface of the right hand. Histological examination confirmed the diagnosis, the patient had a monobloc excision of the lipoma associated with median nerve release, and the follow-up did not deplore any recurrence. Diagnosis of the carpal tunnel secondary to a lipoma is difficult, especially in the absence of a clinically palpable mass. Imagery is then important to confirm the diagnosis and to prepare the operative procedure. Excision is the necessary condition for ameliorating pain and preventing recurrence.
Keywords: carpal tunnel, median nerve, lipoma.

INTRODUCTION

Soft tissue lipoma is a benign tumor commonly found in the limbs, although its localization in the hand remains rare, between 1 and 4% of benign tumors of the hand [1], lipomas are considered benign tumors when they are less than 5 cm in diameter [2], they generally manifest as asymptomatic swelling, with slow and progressive evolution (3), however, sometimes they can lead to symptomatology related to the compression of neighborhood structures especially the peripheral nerves [4].

Few cases of carpal tunnel syndrome secondary to medial nerve compression by a lipoma are reported in the literature [5].

The purpose of this article is to describe an exceptional case of a carpal tunnel syndrome secondary to a lipoma in a young woman successfully treated by a tumor resection with release of the anterior carpal ligament

CLINICAL CASE

This is a patient aged thirty-five years old, an office secretary, was seen in consultation due to palmar pain of the right hand (dominant hand) of progressive installation for 6 months accompanied by paresthesia in the first three fingers of the right hand accentuating in position of hyper flexion of the wrist

The Examination revealed a progressive evolution of nocturnal acroparesthesia. The physical examination did not show mass on palpation and showed a limitation of wrist mobility amplitudes with maximum flexion at 65 ° and extension at 80 °. There was a decrease in sensitivity fingers and gripping force of the right hand compared to the left side

The electro-physiological study with the electromyogram confirmed the carpal tunnel diagnosis and the standard radiographs of the right hand and wrist face and profile returned normal.

The patient was admitted to the operating room in supine position, upper right limb in external rotation abduction, under loco-regional anesthesia of the right hand by Xylocaine 2% and a tourniquet in the lower third of the forearm. The patient was admitted to the operating room in supine position, upper right limb in external rotation abduction, under loco-regional anesthesia of the right hand by Xylocaine 2% and a tourniquet in the lower third of the forearm. Inoperative, a lipomatous mass measuring 1.5 cm by 0.8 cm and occupying the carpal tunnel space was discovered (figures 1 ,figure 2 and figure 3), then excised carefully protecting the median nerve that was compressed by the tumor

The anatomo-pathological analysis of the mass is compatible with a lipoma without signs of malignancy. The evolution was favorable and the patient recovered a complete function of the hand namely the mobility of the fingers and the wrist, the

grip force, with complete disappearance of acroparesthesia

Fig-1 : Intra-operative image of the carpal tunnel lipoma

Fig-2 : Intra-operative image of the carpal tunnel lipoma

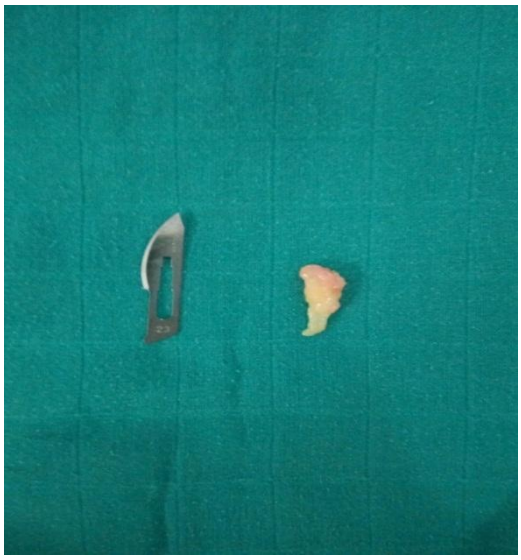

Fig-3: Image of the lipomatous mass after total excision

DISCUSSION

Lipoma is a benign tumor consisting of the abnormal proliferation of mature fat cells, considered to be the most common benign tumor of the soft parts of the limbs, although the localization of the hand remains rare [6].

The lipoma is usually painless and its discovery is either fortuitous or related to signs of nerve compression, depending on its location, it can cause compression in the forearm's distal quarter of the sensory branch of the radial nerve [7], a carpal tunnel syndrome by the median nerve compression, or the ulnar nerve compression in the Gyon tunnel [8].

There is no relationship between the lipoma's size and the appearance of neurological signs of carpal tunnel syndrome; moreover, there is no case of distal vascular compression with ischemia reported in the literature.

The wrist electromyogram is also essential to diagnose and document the nerve lesion, and Secondary Carpal Tunnel Syndrome should be suspected in any abnormal conduction of the median nerve targeted in unilateral EMG, especially in young subjects [9].

The MRI role is fundamental to the suspicion of a secondary carpal tunnel syndrome because it represents a tool for the diagnosis of soft tissue tumors, as it can specify the nature of the lesion, its extent and its relationship with the neighboring structures, thus allowing better planning of the surgical procedure

In MRI, the lipoma appears to consist of normal adipocytes, has an aspect quite comparable to that of subcutaneous fat, it is a homogeneous lesion, hyper intense in T1 weighting and in T2 weighting, and if one uses sequences with the fat signal suppression,

the lesion appears then hypo intense, we can see a fibrous capsule that surrounds the lipoma and appears hypo signal on all sequences [10].

The treatment of our patient involves an anterior carpal ligament incision, a tumor excision and median nerve release in the carpal tunnel. This lipoma excision should be careful in monobloc while respecting the surrounding structures

The anatomo-pathological study resected intra-operatively is essential especially for lipomas whose size is greater than 5 cm in order to confirm the diagnosis and to eliminate a malignant tumor namely liposarcoma [11].

Well-conducted treatment includes the anterior carpal ligament incision, the tumor excision, and median nerve release, generally gives good results and excellent recovery from pain of paresis, and grip strength.

CONCLUSION

The carpal tunnel syndrome is pathology most often idiopathic, however the other etiologies must also be mentioned, which imposes a wide and complete clinical examination as well as explorations for diagnosis (electromyogram) and etiology (the soft parts ultrasound, MRI)

The hand and wrist lipoma is even rarer as a cause of the carpal tunnel [12], its successful complete resection gives excellent results and the postoperative histological study is fundamental to avoid a liposarcoma whose confirmation radically changes the management plan

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