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Case Report

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Pleomorphic Fibroma of Tendon Sheath in Palmar Area

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Abstract

Tendon sheath fibromas are slowly growing, firm, immobile, and painless masses that are frequently seen in fingers. They are commonly observed in middle-aged males. In our report, we discuss a case of a painless mass in the palmar area that was diagnosed as a pleomorphic fibroma of tendon sheath on histopathologic examination in light of the literature.

Keywords: Tendon sheath pleomorphic fibroma, palmar area, hand

INTRODUCTION

Fibroma of the tendon sheath is most frequently encountered on the digits as a painlessly growing mass. It accounts for approximately 2%–3% of hand tumors. These fibromas are tumoral lesions that rarely occur in the palmar region, as attached to the tendon or to the tendon sheath. The lesions are commonly seen in mid-aged individuals (third to fifth decades) and mostly in males. Fibromas of the tendon sheath have been identified to be macroscopically of approximately 2 cm in size, well-circumscribed, usually encapsulated, nodular or multinodular lesions. Although these are benign tumoral lesions, a recurrence rate of 24% is reported in the largest patient series. Such a high recurrence risk is associated with multinodularity and insufficient surgical procedures.[1-5]

This study presents a case involving a painless bulk in the palmar region, which was evaluated as a pleomorphic fibroma of the tendon sheath in histopathological examination.

CASE PRESENTATION

A 45-year-old male patient presented to our polyclinic with a 3-year history of an enlarging, painless mass in his palm. On examination, a mass was seen to cause bulging on a 2×3 cm site on the skin; the palpable mass was observed to be firm and non-movable. It did not move with the motion of the tendon or imposed any limitation on the hand functions. Motor and sensory examinations were evaluated as normal. Bidirectional hand radiography did not reveal any metacarpal bone erosion. A well-circumscribed lesion of approximately 3×4 cm, deemed to possibly be connected with tendinous structures, was noted via ultrasonographic evaluation. All laboratory test results were normal.

A surgical procedure with a provisional diagnosis of hand tumor was planned. An Esmarch bandage was placed on the hand under an axillary block, and the patient was taken to surgery. A zigzag incision was made on the lesion, and flaps were lifted to access the mass (Figure 1). The mass was released from its surrounding structures via dissection. Median nerves and nerve branches and superficial arch veins were secured before the mass was removed (Figure 2). For skin closure, 4/0 polypropylene (Doğsan®, Trabzon, Turkey) was used. No complications were observed during the postoperative period. Mass recurrence was not observed during the 1-year follow-up.

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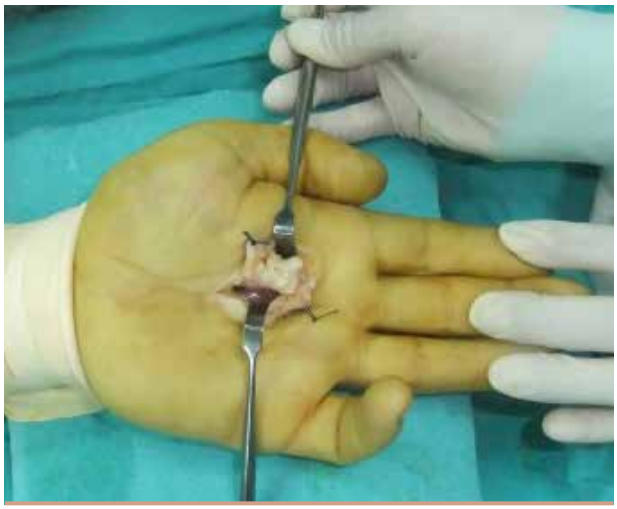

Figure 1. View of the mass in the palmar area

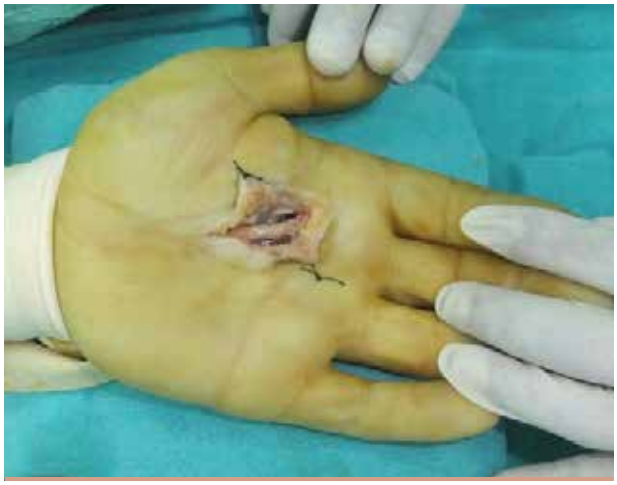

Figure 2. Protected view of the median nerve branch after mass excision

During histopathological examination, the mass was evaluated as a pleomorphic fibroma of the tendon sheath.

DISCUSSION

We present a case with a pleomorphic fibroma of the tendon sheath, an occurrence mostly seen on the digits and rarely in the palmar region, and we discuss the case along with a literature review.

In 1936, Geschickter and Copeland[6] were the first to identify that such fibromas consist of collagen fibrils and tightly packed fusiform cells and that such features differentiate these tumoral formations from other tendon sheath tumors. Later in 1979, in a series of 138 cases, Chung and Enzinger[4] demonstrated the clinical, macroscopic, and microscopic features of this tumoral formation. They further demonstrated that these formations could lead to a deformity and erosive changes in the bone.[7,8] Yamamoto *et al.*[9] reported a fibroma of the tendon sheath that led to a deformity in the toe. In addition, there are cases that are known to compress the median nerve, to cause rupture in the extensor tendon, and to lead to skin ulcerations.

Fibromas of the tendon sheath are defined to be slowly growing, reactive fibrous or benign neoplasms. It may not be possible to diagnose these for years because of their slow growing and painless nature. Although solid masses generally do not transmit light, these fibromas have a characteristic transillumination ability.[1-5] Depending on their localization, restricted movement and problems in nerve conduction can help in an earlier diagnosis. In our case, the described condition caused no complaints despite a history of 3 years. Although the mass had localized in the branching segment of the median nerve, there was no nerve compression. This can be explained by its deep-reaching expansion into the metacarpal space. The patient experienced no difficulties in moving his hand as the mass did not invade the tendons. His motor skills and hand functions were normal.

These masses are macroscopically identified as well-circumscribed, usually encapsulated, firm lesions with nodular or multinodular structures of approximately 2-cm size, and of a yellowish gray color.[1-5,13,14] These tumoral formations are directly connected to the tendon or tendon sheath and are observed to separate easily in the surgical procedure. Similarly, in our case the fibromas could be easily dissected and attachment to the tendons, bone, or muscles was not observed.

During histopathological examination, pleomorphic fibromas of the tendon sheath lesions were observed to be surrounded by a fibrous pseudocapsule. Dilated and narrow vascular canals and fibroblast-like fusiform cells were identified in the fibrocollagenous matrix. Fibroblasts can be seen in different forms. Pleomorphic fibroma is the tendon sheath fibroma subgroup that comprises fibroblasts of different sizes and forms. Its histologic features, except for the well-circumscribed shape and the ability to show the blood vessel, may overlap with those of nodular fasciitis. Unlike the giant cell tendon sheath tumor, it contains no foamy histiocytes or hemosiderin deposits.[13,14]

Differential diagnosis is of high importance in soft tissue lesions in the hand. Whether benign or malignant, lesions that develop from different types of soft tissues of the hand are frequently seen in this region. They should be discriminated from other soft-tissue-based lesions such as lipoma, lipofibromatous hamartoma, angiomyolipoma, giant cell tendon sheath tumor, non-skeletal chondroma, Dupuytren's disease, foreign reaction, fibromatosis, and cystic lesions. They should also be discriminated from vascular-based pathologies such as hemangioma, vascular malformation, lymphangioma, glomus tumor, and acquired aneurysm. Further, nerve-tissue-based neuroma, schwannoma, and neurofibroma should be considered under differential diagnosis in this region.[1-6]

Radiological evaluation is very helpful in this region with respect to identifying the masses and their localization. No radiological examination other than plain radiography and

ultrasonography were requested in our case. Although magnetic resonance imaging (MRI) provides the best results for showing mass extension in the soft tissue lesions of the hand, an MRI was not required in our patient as the lesion was small.

Pleomorphic fibroma of the tendon sheath can be surgically treated using excision techniques and can be easily excised because the lesions usually do not attach themselves to the surrounding tissue and are well-circumscribed. These types of tumors are demonstrated in the literature to be easily removable even when attached to the tendon and tendon sheath, and in the case of a delay in intervention, to lead to a deformity in the surrounding tissues and bone. Insufficient surgical excision is one of the reasons for recurrence.[1-6]

CONCLUSION

Fibroma of the tendon sheath is encountered as a mass that painlessly grows particularly in the hand region. Early surgical intervention can help to prevent possible deformities in the surrounding area.

Informed Consent: Written informed consent was obtained from patient who participated in this case.

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