

Giant Cell Tumors of Digital Tendinous Sheaths: A Spectacular Case with Literature Review

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DOI: [10.36347/sjams.2019.v07i09.012](https://doi.org/10.36347/sjams.2019.v07i09.012)

| Received: 05.09.2019 | Accepted: 13.09.2019 | Published: 18.09.2019

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Abstract

Case Report

Giant cell tumors of synovial sheaths of tendons develop from synovial joint and periarticular joints. These tumors constitute a benign proliferative disorder of the synovium whose etiopathogenesis is still undetermined. We report the case of a 45-year-old patient. Which presents a voluminous tumor at the expense of the fourth finger of the right hand evolving since twelve months. It is a large mass of 6 centimeters of the large diameter opposite the palmar face of the two proximal phalanges of finger. The diagnosis of a giant cell tumor was previously confirmed by a biopsy. The patient was operated under locoregional anesthesia, with a pneumatic tourniquet at the root of the limb. Dissection was meticulous because the tumor was in contact with the digital pedicles thinned. The tumor was resected extracapsularly. At 9 months follow-up, there was no local recurrence, but the patient maintained a flexion deficit of the proximal interphalangeal joint estimated at 40 degrees.

Keywords: Giant cell tumors; Tendon sheath; the hand; Surgery.

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INTRODUCTION

Giant cell tumors of synovial sheaths have the second highest frequency in tumors seen in the hand after synovial cysts. The painless and non-disabling evolution explains the frequency of large tumors during the first consultation, sometimes extending circumferentially. The latter, however, are more rare and pose particular problems of approach to allow a complete excision. Recurrences after surgical excision are, in fact, considered frequent and are usually attributed to the incomplete excision

CASE REPORT

A 45-year-old patient with a history of a right-sided radial fracture, operated eight years ago; which presents a voluminous tumor at the expense of the fourth finger of the right hand evolving since twelve months. It is a large mass of 6 centimeters of the large diameter in the palmar face of the two proximal phalanges of the fourth finger, it protrudes proximally on the digito-palmar fold, and laterally on the lateral faces of the corresponding phalanges. Thus pushing the

neighboring fingers. We also note the presence of a large collateral vein circulation (Figure-1). The consistency of this mass is soft, moving towards the deep plane and fixed superficially, sensitive to palpation without vascular or nervous disorders. The mobilization of the finger is limited in flexion by the tumor volume. The diagnosis of a giant cell tumor was previously confirmed by a biopsy. A radiograph of the hand showed erosion of the anterior side of the first phalanx (Figure-2). The patient was operated under locoregional anesthesia, with a pneumatic tourniquet at the root of the limb. The cutaneous incision was made in orange quarter encompassing the path of the biopsy, the dissection was meticulous because the tumor was in contact with the digital pedicles thinned, dissociating and repressing the collateral nerve of the vessels (Figure 3 & 4). The tumor was resected extracapsularly (Figure-5). The closure was performed without tension after resection of the excess skin. At 9 months of follow-up, there is no local recurrence and the chest x-ray is still normal. The patient is regularly followed. In addition, he maintained a flexion deficit of the proximal interphalangeal joint estimated at 40 degrees.



Fig-1: Clinical aspect of the giant cell tumor



Fig-2: X-ray of the hand face and profile

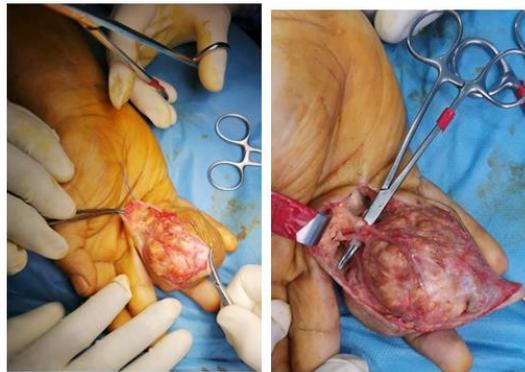


Fig-3: Dissection of the lateral pedicle



Fig-4: Dissection of the medial pedicle



Fig-5: Final appearance after tumor resection

DISCUSSION

The giant cell tumor of the tendon sheath has many synonyms in the literature: nodular tenosynovitis,

villous or pigmented nodular synovitis, synovial fibrous xanthoma, or benign polymorphic cell tumor of the synovial membrane [1]. It can meet at any age but with a peak frequency between 30 and 50 years. It reaches

the woman preferentially and is exceptional in children. The disease is peripheral and predominates near the inter-phalangeal joints of the hand. This soft tumor, of variable size, does not adhere to ligaments or tendons [2]. It is motionless on the exam. The X-ray shows a swelling of the soft parts, homogeneous, without calcification. Bone erosion is possible. Other examinations such as scintigraphy, computed tomography or even angiography are useless [3, 4]. Surgical excision is generally easy because the mass is cleavable from the capsule and tendon sheath. Macroscopically, the size varies from 5 to 40 millimeters. The color is yellow-brown. The lobed and irregular appearance is more marked at the foot.

Only the histological examination makes it possible to affirm the diagnosis. It is a villous structure located in the synovium of the sheath of a tendon. The microscopic study shows a moderate cellularity associating mononucleated cells, multinucleated giant cells and xanthomatous cells containing granules of hemosiderin in variable quantity. The presence of mitoses may be mistaken for the malignancy of this tumor [5].

Differential diagnoses are mainly granulomas with foreign bodies, fibroids and especially xanthomas, which will, however, be easily eliminated by anatomopathological examination. Local recurrence is possible with a rate of up to 44% of cases according to Wright.

Etiopathogeny is far from unanimous. It has long been considered as a sarcoma until the description of Heurtaux for which it is a benign tumor. For other authors, this is a particular localization of xanthomas within the framework of constitutional hyperlipemias. Finally, the plurifocal forms are exceptional.

For tumors of large volume and multirecidivantes or when a sarcoma is evoked, it is prudent to make a biopsy before performing the final tumor resection. In this context, recently, several authors, including Iyer et al. have shown the interest of the cytological study of the needle aspiration product of the tumor which, even if it can not support with certainty the histological type of the tumor, makes it possible to ascertain the absence of cellular atypias related to sarcoma [6]. The treatment of these tumors is surgical. The difficulties to perform a complete excision (only guarantee to avoid recurrences) are related to the tumor volume, itself in relation to the delay in consultation. The approach is guided by clinical and paraclinical examination and especially adapted to each case. The goal is to allow an exposure of the totality of the tumor and the individualization of the different noble elements of the finger (vessels, nerves and tendons) [7]. Marcucci and Foucher have described a

pathway first original that they called first way in "Teeth of the sea", which goes around the finger with lifting of four shreds triangular; well adapted according to the authors to the tumors circum-digital. In a series of 74 cases, he had only 12% recurrence on tumors all circum-digital, without significant cutaneous necrosis.

CONCLUSION

Giant cell tumors are benign tumors of the soft tissues but with local malignancy as well as giant bone cell tumors. Their slow evolution results in a late diagnosis. Their management requires surgery that remains difficult and must be well planned and properly performed to prevent recurrence.

Conflicts of Interest: The authors do not declare any conflict of interest.

Contributions of the Authors: All authors have read and approved the final version of the manuscript.

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