

Giant cell tumour of tendon sheath of the hand

El ve el bileğinde tendon kılıfının dev hücreli tümörü: 141 hastanın değerlendirilmesi

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Amaç: El ve el bileği yerleşimli tendon kılıfından gelişen dev hücreli tümörler tanı, tedavi ve ameliyat sonrası dönemde oluşan komplikasyonlar açısından retrospektif olarak değerlendirildi.

Çalışma planı: Yirmi bir yıllık bir dönem içinde, el veya el bileği yerleşimli tendon kılıfı dev hücreli tümörü nedeniyle 141 hastanın (83 kadın, 58 erkek; ort. yaş 37.5; dağılım 6-77) 146 lezyonuna cerrahi uygulandı. Lezyonların 134'ü elde, 12'si el bileğinde görüldü. Tutulum 77 olguda sağ, 64 olguda sol tarafta idi. Ortalama izlem süresi 3.5 yıl (dağılım 6 ay-11 yıl) idi.

Sonuçlar: Hastaların en sık başvuru nedeni ağrısız yumuşak doku kitlesi idi. Olguların çoğunda tümör (%76) volar bölgede yerleşim göstermekteydi. Yerleşim yeri en sık işaret parmağında (%27), üçüncü parmakta (%24) ve proksimal falanks düzeyinde (%57) idi. Tümörlerin %40'ına 30-50 yaşlar arasında rastlandı. Bulguların süresi bir ay ile beş yıl arasında değişmekteydi. En sık ilk altı ay içinde başvuru gözlendi. On sekiz olguda radyolojik olarak kemik tutulumu saptandı; bunların 12'sinde kortikal kalınlaşma, sekizinde skleroz görüldü. Ameliyat sonrası dönemde dört olguda dijital sinir hasarı, üç olguda yüzeysel enfeksiyon, 12 olguda eklem sertliği gözlendi. Yirmi üç hastada (%16) ortalama 3.7 yıl içinde (dağılım 2 ay-7 yıl) nüks gelişti.

Çıkarımlar: Tendon kılıfının dev hücreli tümörlerinde yüksek nüks oranı göz önüne alınarak, geniş bir cerrahi sahada, titiz bir cerrahi uygulanmalı ve büyütücü gözlükten yararlanılmalıdır.

Anahtar sözcükler: Dev hücreli tümör/patoloji/cerrahi; el/cerrahi; yumuşak doku neoplazmları/patoloji/cerrahi; tendon/patoloji; ksantoma/cerrahi.

Objectives: Giant-cell tumors of the tendon sheath localized in the hand or wrist were retrospectively reviewed with respect to diagnosis, surgical treatment, and postoperative complications.

Methods: During a 21-year period, a total of 141 patients (83 females, 58 males; mean age 37.5 years; range 6 to 77 years) underwent surgery for 146 lesions that developed in the hand (n=134) or the wrist (n=12). Involvement was on the right side in 77 patients, and on the left side in 64 patients. The mean follow-up period was 3.5 years (range 6 months to 11 years).

Results: On presentation, the most common symptom was the presence of a painless soft tissue mass. The most frequent localization was the volar part (76%) of the second (27%) and the third (24) fingers, or the proximal phalanx (57%). Forty per cent of tumors were encountered at ages between 30 and 50 years. The duration of symptoms ranged from one month to five years and the highest number of presentations fell within the first six months. In eighteen patients, radiologic studies showed osseous involvement, being cortical sclerosis in 12 patients, and erosion in eight patients. Postoperative complications included digital nerve injuries in four patients, superficial infection in three patients, and joint stiffness in 12 patients. Twenty-three patients (16%) developed recurrences within a mean of 3.7 years (range 2 months to 7 years).

Conclusion: Taking high rates of recurrences into consideration, surgery for giant-cell tumors of the tendon sheath requires wide surgical exposure, attentive skills, and the use of magnification.

Key words: Giant cell tumors/pathology/surgery; hand/surgery; soft tissue neoplasms/pathology/surgery; tendons/pathology; xanthoma/surgery.

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Surgical Technique

The principal technique used for tumor excision was marginal excision. The magnifying glasses were used in 48% of cases. Brunner type incision at volar site, longitudinal 'S' incision at dorsal site and mid-lateral incision at lateral locality were preferred (fig.2). An attentive dissection was carried out at the surroundings of the tumor's pseudocapsule and the

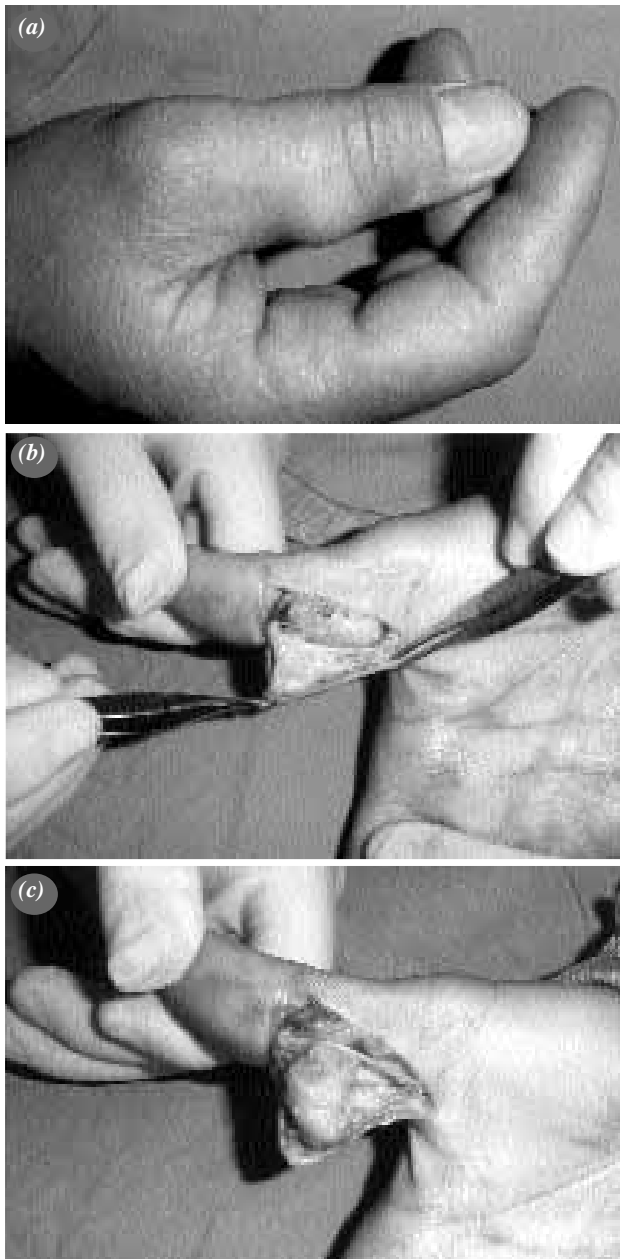


Fig. 1. (a) Mobil and painless xanthoma at the ulnar side of the thumb. (b) Surgical incision and bringing up the xanthoma (c) Careful dissection and excision of the xanthoma with the protection of the neurovascular structures.

operation was finished after the examination of the remaining tissues (fig.3). If there is bony invasion the curettage must be done very carefully. In these cases we used curettage and abundant irrigation. Bone graft was necessary in none of the cases.

Results

18 patients had bony affection in radiologic examination. Twelve of them had cortical thickness and 8 had sclerosis. There was no pathologic fracture. In the postoperative period we saw hypoesthesia on the fingertip in four cases and three of them returned in three months. In the last one a surgical exploration was required and a digital nerve injury had been found. In other three cases, there was a superficial infection treated simply by local wound care. In six patients, joint stiffness was cured by physical therapy. In three patients mild stiffness in proximal interphalangeal joint resisted. There was recurrence in 23 cases (16%) at 3.7 years (2 months – 7 years). One of these cases who had been operated from his wrist in another center, three cases who had polycentric involvement and 18 cases who had recurrence in the primary operation sites had been reoperated. One case did not accept the second operation. Second recurrence had been found in three cases and had been realized more wide excision. Radiotherapy was not applied for recurrent tumors and no amputation was needed.

Discussion

Giant cell tumor of the tendon sheath is the second most frequent subcutaneous tumor of the hand. The other localities are hip, knee, foot, wrist and shoulder^{10,11}.

This lesion originated from the synovial membrane is seen in three different form: Isolated lesion originating from the tendon sheath (giant cell tumor of the tendon sheath), solitary intraarticular nodule (localized nodular synovitis) and villous and pigmented lesion frequently concerning the synovial tissue (pigmented villonodular synovitis)¹⁰. The reticular cells, fibrous tissue elements, cholesterol carrying histiocytes, polynucleated giant cells and hemosiderin are seen in the histologic examination^{6,8}. Jones think that these lesions are due to the proliferation or metaplasie of the synovial histiocytes and consequently are related to the extrasynovial histiocytic tumors¹². Multiple xanthomatosis

is seen with hypercholesterolemie but it is different from fibrous xanthomas . These two different lesions are distinguished by Pinkus¹². Some atypical forms can be problematic in the diagnosis. The presence of mitotic figures can lead to a mistaken diagnosis of a malign tumor 4,14.

Giant cell tumors of the tendon sheath, are slowly growing lesions situated at the palmar parts of the fingers and can be seen in every decade. There is frequently single joint involvement; multiarticular lesions are less than 1%¹⁵. Juxtaarticular settlements can cause joint stiffness. These benign masses are more frequent in hand than the other regions. The lesions are frequently dorsal according to Glowacki and Jones but volar according to Reilly^{7,8,12}. In our series the localization is generally on the volar part of the extremity. The most influenced region is the index finger and the tumor is seen in third and fifth decade.

Macroscopically, the tumor is a yellow, lobulated mass. In the x-ray, a soft tissue mass and bony impression, cortical erosion and thickness in the 8 to 14% of the cases^{9,16}. Magnetic resonance imaging show a hypointensity in T1 and T2 sequences and the appearance is the same as the pigmented villonodular synovitis¹⁷.

Surgical treatment is indicated in these lesions. The conservative treatment is not appropriate because of the presence of the fibrous tissue implying the histiocytic cells in spite of some ideas claiming the inflamatory origin of the tumor⁹. Involvement of the flexor tendon sheath, extensor tendons, digital arteries and nerves make the dissection difficult and can facilitate the recurrences. For this reason it is important to work in a wide area to bring up the totality of the tumor. It is essential to protect the neurovascular structures. In our series, there were three cases of neuropraxie and one digital nerve injury.

The rate of recurrences went up to 45%. In this series, the recurrence rate is 14% with one recurrence in 18 cases and two recurrences in 3 cases. Because of the excess of the recurrence rate, it is important to follow the tumor resection principles and to search carefully the surgical area between the mass lobules. Using magnifying glasses are appropriate during surgery. In our cases, some operations

had been realized without magnification in the beginning of the series . It is considered that the high recurrence rates at the first operations and in polycentric cases are related the insufficiency of the mass excision.

In conclusion, giant cell tumor of the tendon sheath, is a benign, slowly growing lesion without any symptom, frequently seen in hand and surgically treated. The recurrence rate can be high. To decrease this rate it is appropriate to apply a careful surgery in a wide area and to use the magnifying glasses.

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