

FIBROMA OF TENDON SHEATH OF THE POPLITEAL FOSSA IN THE CASE OF A 15 YEARS OLD PATIENT

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Abstract

We present the case of a 15 years and 6 months teenager with palpable mass (superficial) in the right knee (popliteal fossa). The paraclinical investigations (CT and MRI) led to the diagnosis of a benign tumor formation (with tissue structure). The histopathological examination concluded with the diagnosis of a fibroma of tendon sheath. The tumor formation was treated surgically.

Key words: Teenager, palpable superficial mass, benign tumor, fibroma of tendon sheath (extremely rare tumor), surgical treatment.

Introduction

The knee tumor represents a pathological crossroad where many lesions regarding the bone and the soft parts may occur. (5)

The tumor lesions of the knee are benign, benign with malignant potential or malignant from the beginning. Benign tumors are dominant in case of children and teenagers (70% of the cases). (5)

Fibroma of tendon sheath (FTS) is a slow-growing benign pathology which appears on tendons, especially on the distal extremity of the upper limb. (1)

In 2015 there were less than 30 cases reported in the literature, related to the knee. (1) This aspect shows the extreme rarity of the pathology (FTS in the knee).

The fibroma of tendon sheath (FTS) may occur at any age, most frequently between the ages of 20-50, especially in males. (1)

70% of the cases present discomfort or/and pain in the knee, only 30% present palpable mass. (1)

Goal of the work

Presentation of clinical, imagistic aspects and of the therapeutic approach in the cases diagnosed (anatomically and pathologically) with fibroma of tendon sheath of the popliteal fossa.

Case report

Clinical data

Male patient at the age of 15 years and 6 months that presents a slow-growing voluminous and superficial palpable mass in the right knee (popliteal fossa) with hard, adherent consistency and painful on palpation.

Imagistic data (CT aspects, also confirmed by the MRI aspects)

- Oval tumor formation dimensions: 95mm/66mm/68mm.
- Relatively clear margins of the tumor formation
- Relatively inhomogeneous structure of the tumor formation, with tissue density, respectively 40 HU – 80 HU (in the sequences with contrast agent)
- Peritumoral edema, bleedings and intratumoral calcifications are absent.
- The tumor formation displaces the popliteal artery posteriorly and laterally (clear aspect revealed by the CT angiography).
- There are no bone changes (of margins and structural changes) and no expansion in the joint space.

CT images are presented in figures 1, 2, 3 and 4.

Therapeutic approach

The tumor formation was surgically removed by femoral-popliteal bypass, respectively the right popliteal artery was partially reconstructed through an end-to-end interposition venous graft (internal saphenous).

Discussions

Differential diagnosis

The density of the tumor formation (40 HU-80 HU, in arterial time, with contrast agent) leads to a tissue etiology and excludes the lipidic or fluid etiology. CT angiography excludes a vascular pathology (aneurysm or arterial-venous malformation) (2).

The absence of calcifications (CT examination) is a counterargument to Myositis ossificans and synovial sarcoma (6,7).

CT malignancy aspects, respectively the peritumoral edema, necroses and the intratumoral bleeding (7) are absent.

MRI malignancy aspects, respectively the fast (in arterial time) and consistent capture of the tumor formation with contrast agent and the continuous invasion (3,4) are absent.

MRI is rarely used for benign tumors of the knee to children (6).

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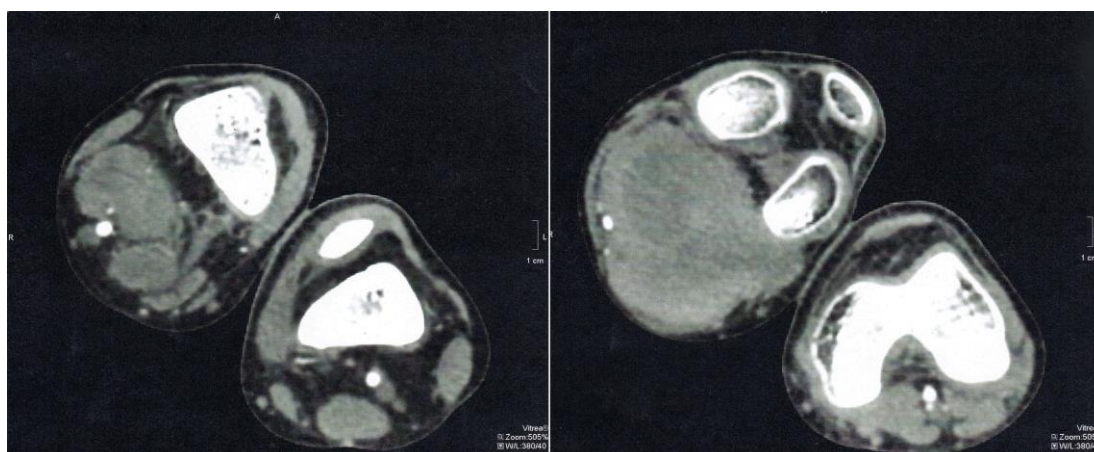


Fig. 1. Axial section

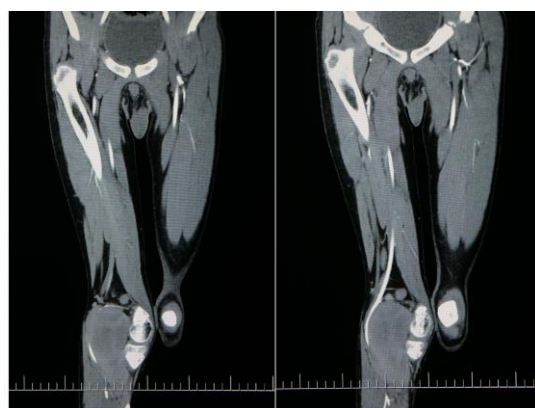


Fig. 2. Frontal section

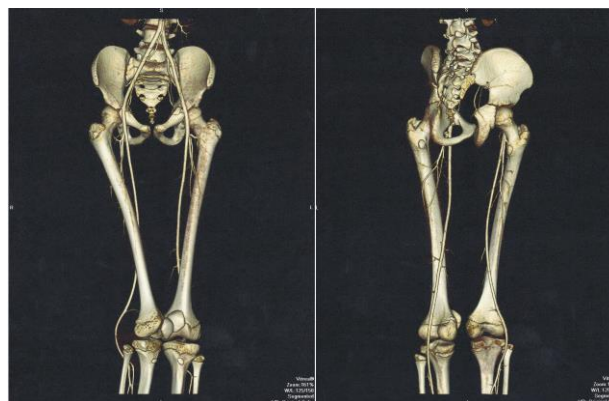


Fig. 3. Angio CT

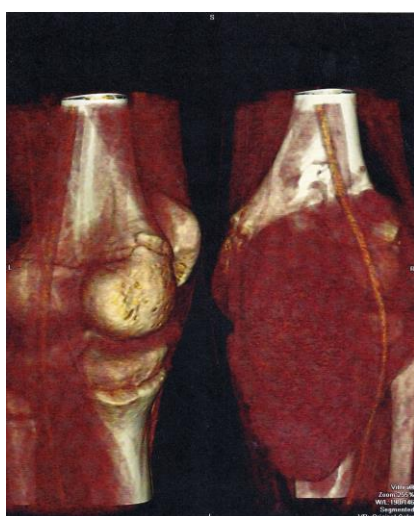


Fig. 4. 3D reconstrucion

Therapeutic approach

The irritation of the surrounding tissues, also mentioned in the literature (1), has been also confirmed in our case.

The detachment of the entire path of the popliteal artery during the surgery has failed (due to tumor adhesion on a portion of the popliteal artery) and a femoral-popliteal bypass has been performed.

Conclusions

The case of a teenager with a voluminous palpable mass in the knee (popliteal fossa) has been presented.

The imagistic examination (CT and MRI) proves the nature of the benign tissue and the histopatological examination has led to the diagnosis of fibroma of tendon sheath.

The surgeon was forced to perform a femoral-popliteal bypass in order to remove the tumor formation, adherent to the popliteal artery wall.

References

1. Dong Ho Ha, Sunseob Choi, Soo-Jim Kim, Lih Wang – Intra-Articular Fibroma of Tendon Sheath in a Knee Joint Associated with Illiotibial Band Friction Syndrom. Korean J. Radiol. 2015; 16(1), 169-174.
2. W. Hizen – Harzallah, R. Salem, M.A. Jalleli, A. Zrig, W. Mnari, J.Saad, M. Maatouk, M. Golli – Imagerie des Tumeurs et Pseudotumeurs des Parties Molles chez L'enfants, Monastir – Tunisie, Congres 2010.
3. Herve Brisse, Sylvia Neuenschwander, Dominique Conanet, Daniel Orbach, Jerzy Klijanienko, Tumeurs des Tissus Mous de L'enfant et L'adolescent – Role de L'imagerie dans la Strategie du Diagnostique, Institute Gustave Roussy – Villejuif, Publie – 15 Mars 2004.
4. G. Delepine, Nicole Delepine, Diagnostic, Clasification et Traitement des Tumeurs des Parties Molles du Genou, Publie 2006, www.nicoledelepine.fr/diagnostic-classification--et-traitement-des-tumeurs-des-parties-molles-du-genou.
5. F. El. Ounani, R. Dafiri, Le Genou Tumoral – A Propos de 31 Cas Pediatriques, Service de Radio-Pediatrie, Hopital D'enfant, Rabat, Sfrnet.Org.
6. H. Ducon Le Pointe, P. Mary, L. Leflot, IRM du Genou de L'enfant, Publie 2003.
7. M. Chelli Bouaziz, M. Bouchriha, M. T. Zidi, S. Chaabane, S. Oueslati, M. Ben Hammouda, M. F. Laded, Images des Synovialosarcomes: A Propos de 11 Cas, Services de Radiologie, Institute National Mt Kassas Tunis, Tunisie

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