

Extra-Articular Villonodular Synovitis of the Knee (about a case)

A. Lagdid*, O. Ben Hazim, M. Boufettal, Ra. Bassir, M. Kharmaz, Mo Lamrani, M. Ouadghiri, A. Bardouni, M. Mahfoud, M.S. Berrada

*Department of Orthopedic Surgery and Traumatology, Ibn Sina UHC, Mohamed V, University, Rabat, Morocco

*Corresponding author

Dr LAGDID Abdelkrim

Article History

Received: 14.05.2018

Accepted: 26.05.2018

Published:30.05.2018

DOI:

10.36347/sjmcr.2018.v06i05.021



Abstract: This clinical case reports the story of a 54-year-old patient with extra-articular villonodular synovitis (SVN) of the knee, whose standard radiography and MRI showed extensive tissue injury in the posterior soft tissues of the right knee without bone involvement. The patient subsequently benefited from surgical excision of his lesion. Villonodular synovitis is a rare benign joint disease of unknown pathogenesis affecting tendon sheaths and synovial pouches. Its management remains complicated because of the lack of specificity of the symptomatology, delaying the diagnosis, and the very high rate of recidivism. Visualization of the lesions is done by MRI but the definitive diagnosis can only be made after anatomicopathological analysis of the surgical piece. The reference treatment is based on synovectomy, especially when the progression has not reached the stage of irreversible osteocartilaginous lesions. It can be performed under arthroscopy or after arthrotomy.

Keywords: Villonodular synovitis - Genou – Traitement

INTRODUCTION

Villonodular synovitis (VNS) is a rare benign joint disease of unknown pathogenesis affecting tendon sheaths and synovial pouches. Classically, two forms are recognized: a localized form and an extra-articular diffuse form. About an observation of diffuse villonodular synovitis in its extraarticular form, we propose to recall the anatomico-clinical characteristics of this tumor by insisting on anatomopathological aspects.

CASE REPORT

A 54-year-old man with no particular pathological history, was hospitalized for antero-external crural swelling of the lower third of the right thigh, which had been evolving for 12 years and gradually increasing in size, causing functional discomfort. Clinical examination revealed swelling of the anterior and posterior face of the right knee of solid consistency. Standard radiography and MRI showed extensive tissue injury in the posterior soft tissues of the right knee. There was no bone involvement. A surgical

biopsy was performed and found villonodular synovitis. Surgical excision was performed, having brought back two well-defined but unencapsulated operative pieces measuring 13 and 9 cm long axis. The histological examination showed a cellular proliferation of homogeneous aspect, of diffuse architecture, mixed with foamy histiocytes. The immunohistochemical study showed that the cells were diffuse and intensely positive for vimentin and CD68. They were negative for the CLA.



Fig-1: Swelling of the anterior and posterior aspect of the right knee

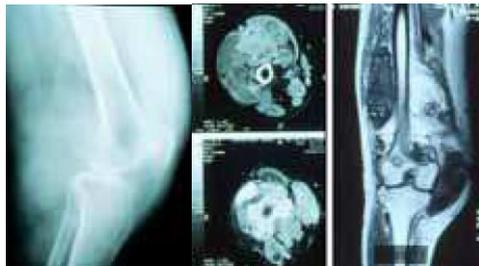


Fig-2-3: Standard X-ray (profile) and MRI: Very extensive tissue lesion in the posterior soft tissues of the right knee without bone involvement

DISCUSSION

Villonodular synovitis (VNS) is a benign disorder of the synovium [1, 2]. In 1941, JAFFE *et al.* [3], proposed to collect the different manifestations of this condition into an entity to which the name "synovitis, bursitis or pigmented villonodular tenosynovitis" was given. In 1995, ENZINGER and WEISS [4] attributed the term extra-articular villonodular synovitis or diffuse giant-cell tenosynovial tumor when the involvement is confined to the soft tissue with or without involvement of the adjacent joint.

Its etiopathogenesis is still unknown; two theories currently oppose: one reactive and the other proliferative. VNS is currently considered to be a tumor-like lesion, because of its extensive character, its ability to recurrence locally, the description of malignant forms with exceptional metastases by ENZINGER and WEISS, and the presence of recurrent genetic abnormalities [5, 7]. VNS can be seen at any age but affects primarily the adult with a higher incidence in the fourth decade without sex predilection [7-9]. The lesion is in most cases monoarticular, affecting the knee in 80% of cases [1, 8, 9].

The clinical symptomatology is not specific; it is most often a painful swelling of variable evolution from a few months to several years, mechanical discomfort or recurrent or chronic effusion. In the latter case, the puncture, which is a simple, non-traumatic gesture, can guide the diagnosis when it reveals isolated hemarthrosis [8, 9]. Standard radiography is not very specific. Arthrography and CT are of little value, especially since the advent of MRI. The most characteristic sign is the presence of a heterogeneous signal with presence of hyposignals in T1 or T2 corresponding to hemosiderin deposits and areas of hypointense in T1 and hyper in T2 corresponding to inflammatory zones enhanced by gadolinium [8, 9]. The treatment is based on synovectomy, especially when the progression has not reached the stage of irreversible osteocartilaginous lesions. It can be performed under arthroscopy or after arthrotomy [9, 11].

Histologically, it is a proliferation of a homogeneous appearance with or without leaks recalling a synovial architecture. The cell density is variable with alternating dense cell areas made from

small round cells with a round, chromatic nucleus with a scanty cytoplasm, and looser areas made of core cells also round but often have clear chromatin and eosinophilic cytoplasm more abundant. It combines multinucleate giant type histiocytic cells, siderophages and xanthomatous cells. A scattered lymphocyte infiltrate is always found [5]. In immunohistochemistry, tumor cells express CD68 [5], as in our case.

Histologically, it is a proliferation of homogeneous appearance with or without slits recalling a synovial architecture. The cell density is variable with alternating dense cell areas made of small round cells, a round and chromatic nucleus and a rare cytoplasm, and looser areas of cells with nuclei that are also round but often have clear chromatin and eosinophilic cytoplasm more abundant. It associates multinucleate giant-type histiocytic cells, siderophages and xanthomatous cells. A scattered lymphocytic infiltrate is always found [5]. In immunohistochemistry, tumor cells express CD68 [5], as in our case.

CONCLUSION

The majority of authors currently consider VNS as a benign tumor that can exceptionally degenerate [9]. Recurrences are frequent in large reported series reaching 50% [9, 12]. Synovectomy as complete as possible is the only factor that significantly decreases the risk of recurrence [9, 12]. MRI monitoring is essential to detect recurrence.

REFERENCES

1. Chow LT, Kumta SM, King WW. Extra-articular pigmented villonodular synovitis of the temporomandibular joint. *The Journal of Laryngology & Otology*. 1998 Feb;112(2):182-5.
2. Peterson LF, Johnson Jr EW, Woolner LB. Extra-Articular Pigmented Villonodular Synovitis of the Knee. Report of a Case. *American journal of clinical pathology*. 1958 Aug 1;30(2):158-62.
3. Jaffe HL. Pigmented villonodular synovitis, bursitis, and tenosynovitis. *Arch Pathol*. 1941;31:731-65.
4. Weiss SW. Benign tumors and tumor-like lesions of synovial tissue. *Soft tissue tumors*. 2001.
5. Coindre J.M. Tumeur ténosynoviale a cellules géantes dans sa forme diffuse. *Bull Fr AIP* 2003; 37:61-4.

6. Myers BW, Masi AT, Feigenbaum SL. Pigmented villonodular synovitis and tenosynovitis: a clinical epidemiologic study of 166 cases and literature review. *Medicine*. 1980 May 1;59(3):223-38.
7. Olivier E, Defives T. Les localisations rachidiennes de la synovite villo-nodulaire pigmentée: Une observation et revue de la littérature. *Revue de chirurgie orthopédique et réparatrice de l'appareil moteur*. 2003;89(6):549-57.
8. Bahiri R, Hassikou H, Amine B, Bahri A, Wahbi S, El Manaouar AM, Hajjaj-Hassouni N. Synovite villonodulaire. *La Presse Médicale*. 2005 May 1;34(9):649-50.
9. Le Tiec T, Hulet C, Locker B, Béguin J, Vielpeau C. La synovite, villonodulaire du genou: Analyse d'une série de 17 cas et revue de la littérature. *Revue de chirurgie orthopédique et réparatrice de l'appareil moteur*. 1998;84(7):607-16.
10. Rochwerger A, Groulier P, Curvale G, Franceschi JP, Dufour M. Synovite villo-nodulaire pigmentée du genou: Résultats des traitements à propos de 22 cas. *Revue de chirurgie orthopédique et réparatrice de l'appareil moteur*. 1998;84(7):600-6.
11. Shabat S, Kollender Y, Merimsky O, Isakov J, Flusser G, Nyska M, Meller I. The use of surgery and yttrium 90 in the management of extensive and diffuse pigmented villonodular synovitis of large joints. *Rheumatology*. 2002 Oct 1;41(10):1113-8.
12. Bentley G, Mac Auliffe T. Pigmented villonodular synovitis. *Ann Rheum Dis* 1990; 49:210-1.