A knee stiffness unusual etiology

A propos d'une étiologie inhabituelle de raideur du genou

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RÉSUMÉ

L'apparition insidieuse d'une raideur isolée unilatérale d'un genou chez un homme de la sixième décade est inhabituelle. Hormis l'origine dégénérative, l'étiologie tumorale ou même infectieuse doivent être évoquées.

Nous rapportons l'observation d'un homme de 64 ans qui consulte pour une raideur du genou droit d'installation progressive depuis 3 ans sans notion de traumatisme. Le bilan radiologique a montré la présence d'une masse à composante mixte osseuse et cartilagineuse arrondie infrapatellaire non adhérente aux tissus avoisinants évoquant un ostéochondrome extra-osseux. Une résection chirurgicale à ciel ouvert a été faite et a permis de libérer le genou. Nous n'avons déploré aucun incident pendant l'acte ni aucune complication dans les suites post-opératoires. L'examen histologique a confirmé le diagnostic. Au recul de trois ans, aucune récidive n'a été notée.

L'ostéochondrome extra-osseux intra-articulaire est une lésion rare et bénigne d'etiopathogénie controversée. Elle concerne essentiellement les sujets de plus de 50 ans. Le genou est la localisation de prédilection. Le bilan radiologique ne retrouve ni connexion aux segments osseux voisins ni signes de malignité.

Comme chez notre patient, la simple résection chirurgicale permettra de récupérer la course articulaire. L'examen histologique confirmera le diagnostic.

Mots-clés

Mobilité réduite ; genou ; imagerie par résonnance magnétique ; chirurgie orthopédique ; ostéochondrome

SUMMARY

Progressive unilateral knee stiffness is an uncommon complaint in older adult. Tumor and specific infection should be considered in addition to osteoarthritis.

We report a case of intracapsular and paraarticular chondroma in the infrapatellar Hoffa's fat pad that presented as a painless limited knee in 64-year old man. A physical examination revealed a firm, movable mass in the infrapatellar area. Radiographs and Magnetic resonance images showed an ovoid, well-defined, soft tissue mass with focal calcification in the infrapatellar fat pad. The mass was completely resected surgically through a medial parapatellar approach. The final pathology revealed an intracapsular and paraarticular chondroma. At follow-up, 3 years after the operation, patient was pain-free, with complete recovery of the range of motion of the knee and without any clinical or radiographic evidence of recurrence.

Intracapsular and paraarticular chondroma is a rare benign lesion of the large joints (mostly the knee). The Pathogenesis of these tumours is controversial. The diagnosis is made with correlation of clinical, radiological and histological features. The treatment of choice is surgical excision.

Key-words

Stiffness, knee, Magnetic Resonance Imaging, orthopedics, osteochondroma

INTRODUCTION

Anterior knee pain and stiffness is a common complaint in older adult. Although the majority of knee stiffness is due to osteoarthritis, the therapist should be aware of rarer causes especially if it's unilateral and painless.

CASE REPORT

A diabetic 64-year man presented with 3 years progressive stiffness of the right knee. He had no pain or history of trauma. Physical examination revealed partial squat with 3cm genu varum. There was no limping or unsteady gait. The right knee was swelling with a firm, movable mass in the infrapatellar area. Flexion was restricted (80°). There was no general effusion and ligamentous knee exam was negative. Examination of the contralateral knee was unremarkable.

Radiographs of right knee revealed an ovoid calcified mass in the Hoffa's fat pad and calcific tendinitis of the patellar and the quadriceps tendons. (Figure1). MRI showed a 3.7x4x5cm sized well-defined soft tissue mass in the Hoffa's fat pad. The mass had heterogeneous high signal intensity on T1 and T2-WI with peripheral low signal intensity corresponding to calcification. There was a femorotibial osteoarthritis and joint effusion. The patellar tendon was thick with high signal intensity on T2 WI. The tumor was surgically excised with medial parapatellar approach. The mass was attached to subpatellar synovium with no osseous attachment. The specimen was irregularly shaped, tan-white in color with a cartilaginous appearance mixed with yellow calcified foci (figure 3a,b + vidéo). Microscopic finding showed mature lobules of hyaline cartilage with focal calcification (figure 3c,d). No atypical cells or mitotic figures were seen. The diagnosis was intracapsular and paraarticular chondroma. Postoperatively the patient had complete recovery with no recurrence 3 years after surgery. (figure 4)

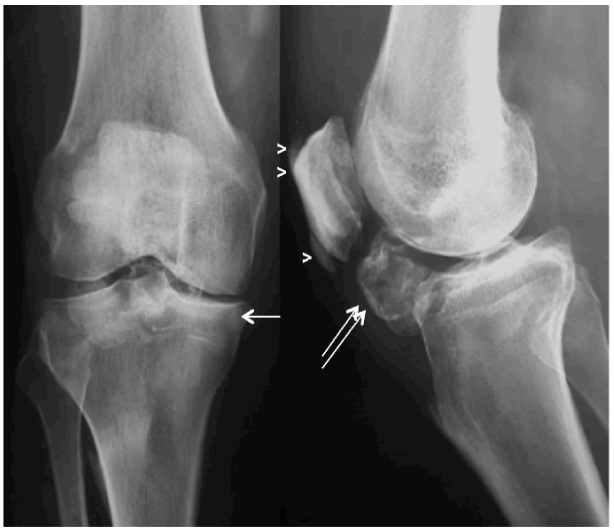

Figure 1 : radiographs of the right knee show an infra patellar calcified soft tissue mass (double arrow), calcific tendinitis of the patellar (arrowhead) and the quadriceps tendons (double arrowhead) and feomorotibial osteoarthritis (arrow)

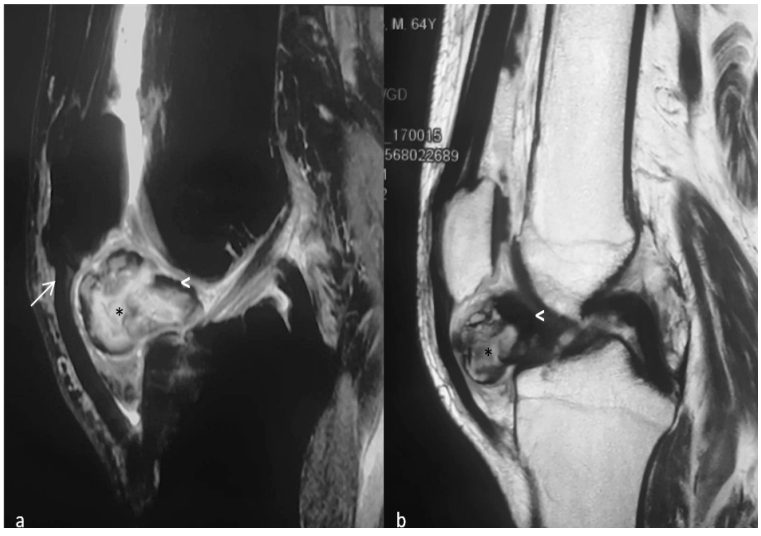

Figure 2 : MRI Sagittal T2 fat sat WI (a) and Sagittal T1 WI (b) shows a heterogeneous mass (asterisk) with central high signal intensity on T1 and T2-WI and peripheral low signal intensity corresponded to calcification (arrowhead). The patellar tendon is thick with high signal intensity on T2 WI. (arrow)

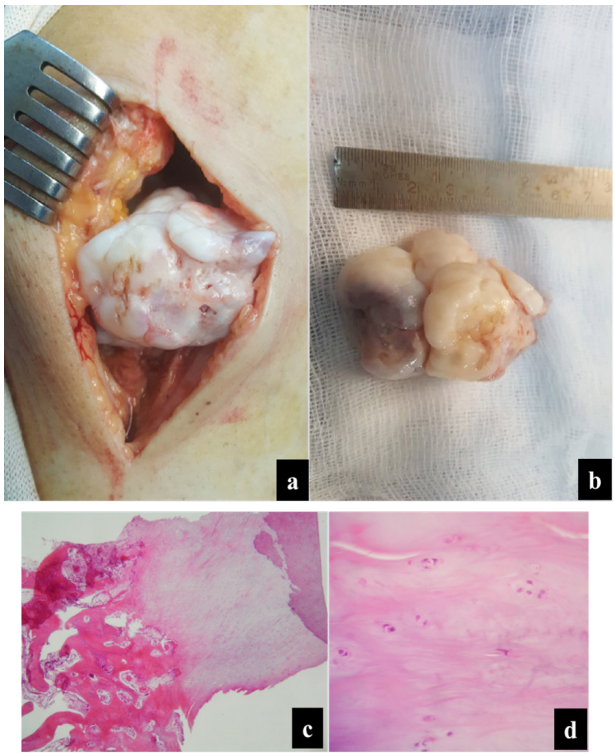

Figure 3 : a+b- easy extraction by medial parapatellar approach of a polylobed free ossified mass making 6 cm of major axis
c- (Hematoxylin Eosin x 10): Cartilaginous proliferation developed on lesions of exostosis
d- (Hematoxylin Eosin x 40) : chondrocytes with regular nuclei without atypia

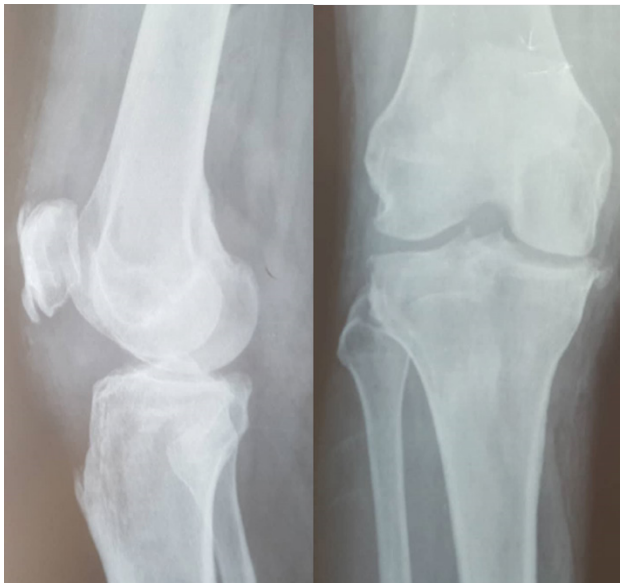

Figure 4 : postoperative X-ray

DISCUSSION

Para-articular and intracapsular chondromas are rare benign tumours mostly seen in the vicinity of the large joints. First described by Jaffe in 1958, [1] these lesions have been named capsular osteomas, osteochondromas, or chondromas, giant extrasynovial osteochondroma depending on the relative proportions of bone and cartilage [2-8]. The Pathogenesis of these tumours is also controversial. [9]. Rizzello et al. [4] reported that this tumor seems to originate from a cartilaginous metaplasia of the articular and para-articular connective tissue due to a traumatic event of Hoffa's fat pad. Our case did not report any history of significant trauma.

The knee region is the most common site for intracapsular, extrasynovial chondromas. And most paraarticular chondromas around the knee have been located anteriorly, in the infrapatellar region. [10]. Other locations have been reported such as ankle, elbow and the hip joint [11-15].

The average age is 50 years. There is no preponderance for gender. The clinical complaints are local discomfort, moderate pain, slow growing mass and some degree of limited motion in the joint[16].

Radiographs are valuable in identifying the matrix of the mass with regard to ossification and calcifications. Radiographs typically show a solitary calcified lesion without any adjacent periosteal reaction, in contrast to synovial chondromatosis, which manifests as multiple osteocartilaginous nodules. The most common MRI findings are well-circumscribed lesions with low to intermediate signal on T1 WI and high signal on T2 WI corresponding to cartilage foci. Whereas, areas of ossification are hypointense on T1 WI and markedly hypointense on T2 WI. MRI provides accurate measurements of these tumors and their relationship with the adjacent structures. MRI also demonstrates the absence of osseous continuity with underling bone.

Intracapsular and paraarticular chondroma must be differentiated from localized nodular synovitis, synovial chondromatosis and soft tissue chondrosarcoma

The treatment of choice for these tumors is careful surgical excision. Indeed, some authors used arthroscopic techniques and then open excisions were performed [17]. Due to the size of the lesion, we decided that the arthroscopic excision would not be a practical method. The excision is quite simple thanks to loose synovial connection and absence of any osseous continuity.

With correct diagnosis, unnecessarily aggressive surgical treatment will be avoided.

The histologic appearance of these lesions varies. These tumors are composed of a single mass of multiple osteochondral nodules. Histologically, each nodule shows a peripheral hyaline cartilage and a central portion that contains lamellar and trabecular bone. Although some of the overall morphology of paraarticular osteochondroma is similar to that of conventional osteochondroma, it differs from the latter by not arising from a bone surface [18].

Malignant transformation has never been reported and local recurrence is rare [19,20].

CONCLUSION

Intracapsular and paraarticular chondromas of the knee are a rare benign lesion and must be differentiated from other benign or malignant tumors, which occur in the same region. The size and the location may cause joint movement limitation. The treatment of choice is surgical excision.

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