Perspective

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Synovial Chondromatosis is a Rare Proliferative Disorder that Causes Pain

Kayhan Gurbuz*

Department of Rheumatism and Immunology, Peking University Shenzhen Hospital, Guangdong, China
***Corresponding author:** Kayhan Gurbuz, Department of Rheumatism and Immunology, Peking University Shenzhen Hospital, Guangdong, China, E-mail: Gurbka@gmail.com

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Description

Synovial Chondromatosis (also called Synovial Osteochondromatosis) is a rare benign joint disease caused by synovial cartilage metaplasia, the etiology remains unknown and the disease is characterized by the formation of cartilaginous nodules in the synovium. Calcification or ossification can occur at a late stage of the disease. A 48-year-old Chinese woman presented to out-patient department complaining of recurrent and progressively worsening right knee pain, swelling and stiffness after a minor contusion 4 years ago. She underwent careful preoperative imaging and planning followed by a two-stage arthroscopic and open surgery (combined anterior and posterior approaches).

Synovial Chondromatosis

Histopathological examination of the specimens confirmed our suspected diagnosis of Synovial Chondromatosis. 15 months after surgery, she has regained full range of movement, but continues to experience residual insidious knee pain when standing for a long time. Synovial chondromatosis is a rare proliferative disorder that causes pain, swelling, and restriction of movement to the joints it affects. It low incidence rate and differential diagnosis makes it sometimes difficult to diagnose, reason why adequate radiology imaging and arthroscopic exploration are decisive for the diagnosis. Surgical lavage and excision have proven to be the reasonable and preferable course of treatment of synovial chondromatosis. Synovial chondromatosis (SC) or synovial osteochondromatosis is a benign metaplastic proliferative disorder of the synovium which affects sub intimal fibroblasts in synovial joints, tendons and bursa. Synovial chondromatosis can be classified as primary, when an idiopathic benign neoplastic process occurs in an otherwise normal joint and secondary when there is metaplasia of synovial tissue in to cartilaginous tissue without cytogenetic aberrations in a degenerating joint. It can also be classified as generalized when the disease is diffused in multiple compartment of the joint, and localized when it affects a specific spot. SC is characterized by the formation of multiple cartilaginous nodules and usually led to chronic pain, recurrent swelling, soft tissue crepitus, palpable loose bodies and limit the function of involved joints. The true etiology remains unknown, but the metaplastic theory is the most favored. Although the disease affects almost any synovial joint, it most frequently involves the knee joint, followed by, in no specific order, shoulders, hips, and elbows. The diagnosis of SC can be difficult, especially for an out-patient, not only because of his extremely low incidence, but also because of it similarities with other forms of synovial proliferation. The diagnosis is generally suspected clinically after radiologic examinations and confirmed by biopsy of the excised specimens.

Debridement

Arthroscopic exploration was performed using the conventional anteromedial and anterolateral portals, which permitted to notice numerous (thousands, 2-3 mm large) cartilaginous granular nodules in the joint cavity, wild chondral cartilage damage, grade III OA of the knee and a damage lateral meniscus. The med al meniscus and the cruciate ligaments were normal. Debridement and removal of granular nodules under arthroscopy using the shaver was performed. During the procedure, we realized that the nodules were disseminated all around the joint cavity, the anteromedial and anterolateral portals were not enough to completely remove the granular loose bodies, so we decided to create an extra posteromedial portal which served to remove the granular loose bodies present in the posteromedial and poster lateral compartment of the joint. Debridement of the loose bodies under arthroscopy using the shaver was not convenient because of the large amount of the nodules, and resection of the popliteus mass under arthroscopy was not possible, so we decided to continue the surgery using a combined anterior and posterior open procedures to make sure all the granular loose bodies were removed and masses excised. Synovial chondromatosis is a benign, slowly progressive condition which can lead to disastrous consequences when misdiagnosed or not properly treated. Given the patient age, history and results of radiological, physical and arthroscopic examinations, the present case appear to involve disseminated synovial chondromatosis extending into the popliteal fossa. We believe that the popliteal mass found in the posterior compartment of the knee of the patient was initially a baker cyst which got filled by migrant intraarticular cartilageous loose bodies and within the evolution of the disease turned into a large mass. This certainly raises concerns about a possible transformation into synovial chondrosarcoma, but in this case histopathological examination

after surgery confirmed the diagnosis of SC. However, there are few reports in the literature about malignancy transformation of SC and all of these reports have pointed recurrent and long-standing cases as key factors of this transformation. The diagnosis of some cases of synovial chondromatosis can be very challenging and misdiagnose might occur. In the present report the radiologist at the countryside hospital based on MRI findings suspected a VPNS.