

요골 신경 마비를 유발한 활액막 연골종

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활액막 연골종은 관절의 활액막에서 결체조직의 화생에 의해 연골 조직이 형성 되는 질환이며 드물게 건초, 활액낭에 발생하는 경우도 있다. 정확한 발생 기전은 아직 밝혀지지 않았으나 외상, 감염 등이 원인으로 제시되고 있으며 관절 연골을 구성하던 연골의 일부가 떨어져 나와 활액막내로 흡수되어 연골성 화생을 일으킨다는 가설이 유력하다. 주로 슬관절에 발생하며 그 외 견관절, 주관절, 고관절 등에서 발생하는 것으로 알려져 있다.

65세 남자가 약 6개월 간의 우측 주관절 동통, 주관절 구축 및 우측 제1수지와 완관절의 신전 장애 및 감각 저하를 주소로 내원하였다. 단순 방사선 검사상 주관절의 관절 간격이 좁아져 있었고 관절면의 가장 자리에 골극이 형성 되어 있었으며 연골하골은 경화소견이 관찰되었다. 자기 공명 영상 검사상 요골두 직하방 전외측에 약 16×12 mm 크기의 원형의 종양이 관찰되었으며, T1 강조 영상에서 균질의 저신호 강도, T2 강조 영상에서 고신호 강도와 저신호 강도가 혼재 되어 있었다. 종양 절제술을 시행하였으며 수술소견상 종양에 의해 요골신경이 압박되어있는 소견이 관찰되었다. 절제한 종양은 조직소견상 활액막 연골종으로 진단되었다.

색인 단어: 주관절, 활액막 연골종, 요골신경 마비

INTRODUCTION

Synovial chondromatosis is a rare pathology of unknown etiology. It originates from the chondroid metaplasia of the connective tissue of the synovial membrane. Consequently, cartilaginous nodules develop in the affected joints, first calcifying and then ossifying. The bursae mucosae, the vaginae tendinis

and the para-articular connective tissue are less frequently affected. The most common locations of this pathology are the knee, the hip, the shoulder, the elbow and the ankle. The small joints are rarely affected, even less the bilateral involving of joints, above all of hand or foot, is exceptional. In a clinical and radiological evaluation, it is difficult to distinguish synovial chondromatosis from

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osteoarthritis and from degenerative arthropathies in general. A sure diagnosis can be obtained only by means of a histological examination. We here report a case of synovial chondromatosis located on the right elbow joint, compressing radial nerve.

CASE

A 65-year-old man presented to an out

patient clinic. He complained of pain and restricted joint motion of the right elbow, inability of extension of the right thumb and wrist, and decreased sensation in the radial nerve distribution of his right hand. A mass about the elbow, which had been previously identified at 6 months ago, seemed to have recently increased in size, according to the patient. He had flexion contracture of his right elbow of 20 degrees.



Fig. 1. The anteroposterior and lateral radiographs of the right elbow show narrowing of the elbow joint space, bony spur on the edge of the joint, and radio-opaque sclerotic change of subchondral area with osteophyte.

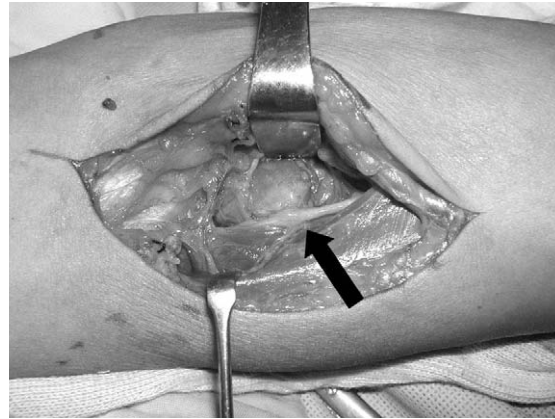


Fig. 3. In operative fields, the 2.5×1.5×1.5 cm sized mass was located in supinator muscle. The deep branch of the radial nerve was compressed by the hard round mass and thickened hypertrophied portion of the radial nerve was noted (arrow)

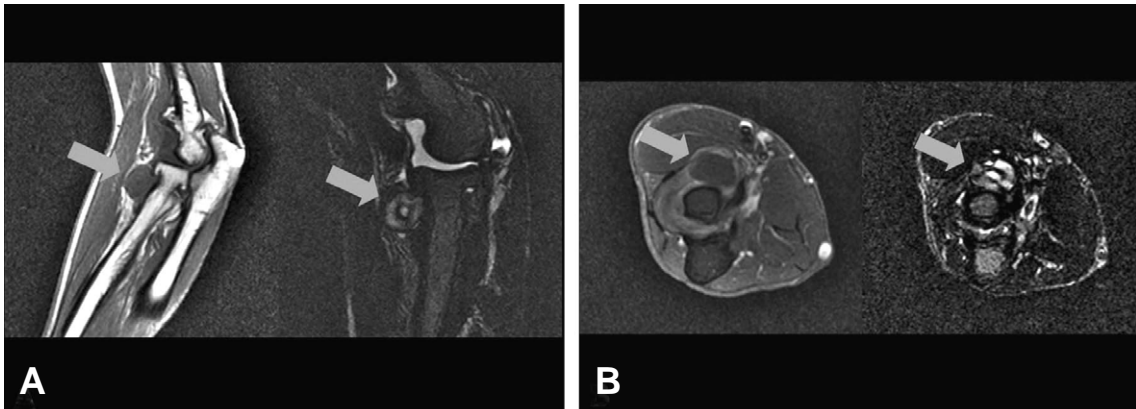


Fig. 2. The MRI (A; sagittal view, B; axial view) shows 1.6×1.2 cm sized round mass (arrows) anterior to neck portion of the radius, the mass shows homogenous low signal intensity in T1 weighted image, high and low signal intensity in T2 weighted image.

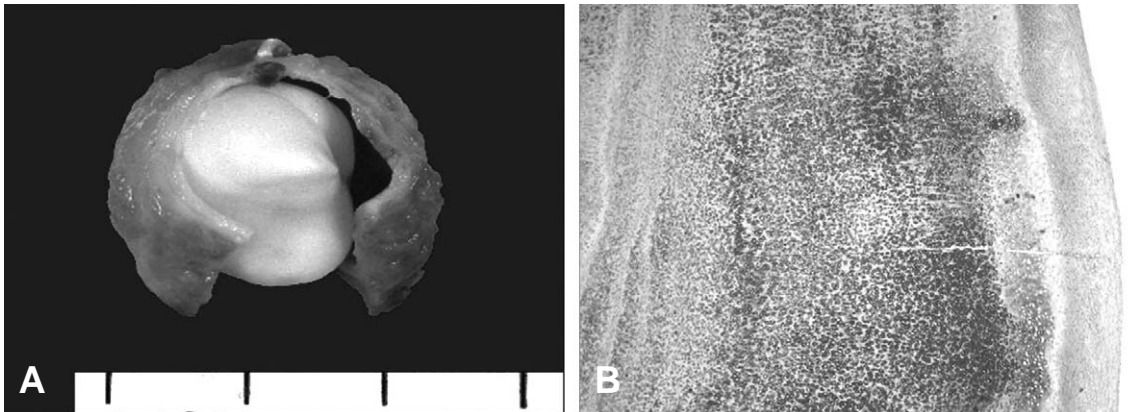


Fig. 4. About $2.5 \times 1.5 \times 1.5$ cm sized mass consist of two fragments of irregular whitish gray soft tissue and cartilage in operative fields(4-A). Microscopic feature(4-B) shows cartilaginous tissue surrounded with synovial tissue (HE, $\times 40$)

and extension power of the wrist and fingers were grade I. The radiographs revealed narrowing of the elbow joint space, bony spur on the edge of the joint, and radio-opaque sclerotic change of subchondral area with osteophyte(Fig. 1). MRI revealed 16 x 12 mm sized round mass anterior to neck portion of the radius, the mass showed homogeneous low signal intensity on T1WI, high and low signal intensity on T2WI(Fig. 2). Because of the subjective neurological findings and the size of the mass, a surgical excision of mass was planned. An anterolateral dissection was carried out and the mass was excised. The mass was $2.5 \times 1.5 \times 1.5$ cm in its size, and encapsulated with hard, whitish, cartilage-like material, compressing the radial nerve on the radial head(Fig. 3). The deep branch of the radial nerve was compressed by the hard round mass and thickened hypertrophied portion of the radial nerve was noted. Diagnoses were confirmed to synovial chondroma by histologic examination(Fig. 4). The neurological symptoms recovered in postoperative 6 months completely, and there are no complications and local recurrence in postoperative 29

months follow up.

DISCUSSION

Synovial chondromatosis is characterized by multiple cartilaginous and osteocartilaginous bodies. The knee is the most often affected joint, followed by the hip, elbow, wrist, and ankle. Subsynovial fibroblasts may be the cells that undergo metaplasia.¹¹ In response to an undetermined stimulus, these cells undergo metaplastic transformation to chondrocytes, which proliferate and give rise to multiple foci of hyaline cartilage. Once metaplasia occurs, additional accumulation of cartilage results from proliferation of the chondrocytes^{5,7}. These cartilaginous nodules may become pedunculated, protruding into the joint space. They may remain attached to the synovium by a stalk or become detached. If they break from the stalk (autoamputate), intrasynovial loose bodies, or "rice bodies" result. These may undergo secondary ossification or, in some cases, spontaneously regress⁶.

Symptoms include mechanical catching or locking, swelling, pain, decreased range of

motion, and loss of function⁶⁾. A history of trauma to the affected joint is often given. However, the frequency of joint trauma and the infrequency of synovial chondromatosis make it questionable whether trauma is etiologically significant⁹⁾. Radiographic findings are often characteristic. Calcification may be seen radiographically, depending on the degree of calcification of the lesion. Multiple radiopaque densities are present in the affected joint in a juxta-articular distribution. The densities typically vary from a few millimeters to several centimeters¹⁰⁾. A pathognomic criterion for diagnosis of synovial chondromatosis defined by Jaffe is the presence of cartilaginous foci within the synovial tissue⁵⁾. The cartilaginous nodules may be partially calcified or truly ossified, containing fatty bone marrow⁴⁾. Chondrocytes occur in groups having a clustering architecture. Cellular atypia and binucleated chondrocytes may be seen, but malignant transformation to chondrosarcoma is extremely rare⁹⁾. Synovial chondrosarcoma is the most important entity in the differential diagnosis. Features that favor synovial chondrosarcoma include necrosis, mitotic figures, myxoid stromal change, spindle cells, cellular crowding, and a sheetlike arrangement of cells¹⁾. Local invasion or extension beyond the joint capsule is worrisome for malignancy. Conditions which may produce non-traumatic paralysis of the posterior interosseous nerve include compression by the fibrous edge of the entrance and/or exit of the supinator, benign tumours or tumorous conditions^{2,3)}. Partial compression of the nerve may result in a selective and incomplete

paralysis, which, if untreated, will progress to complete paralysis¹²⁾.

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Abstract

Synovial Chondroma Causing Radial Nerve Palsy

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Synovial chondroma is an uncommon benign lesion characterized by metaplastic cartilage formation within the synovial connective tissue, usually intraarticular, commonly affects the knee, hip and elbow.

We would like to present the case of a 65-year-old man suffering from synovial chondroma of the right elbow responsible for radial nerve entrapment neuropathy. This is a case of synovial chondroma of the right elbow in an 65-year-old man presenting with pain and restricted joint movement of the right elbow, loss of extension and sensation of the right thumb and wrist. Plain radiographs showed narrowing of elbow joint space, bony spur on the edge of the joint, and radio-opaque sclerotic change of subchondral area. MRI revealed 16×12 mm sized round mass on the radial head, homogenous low signal on T1WI, heterogenous high and low signal on T2WI. The patient underwent marginal excision of the mass, compressing the radial nerve. Diagnosis was confirmed by histologic examination.

Key Words: Elbow, Synovial chondroma, Radial nerve palsy

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