Synovial Chondromatosis of the Metacarpophalangeal Joint
— A Case Report —

Jeung Woo Kim, M.D., Seok Hyun Kweon, M.D., and Dong Chul Kim, M.D.*

Department of Orthopedic Surgery, Wonkwang University Hospital*, Hana Hospital†, Iksan, Korea

Synovial chondromatosis is an uncommon lesion, which is characterized by cartilaginous and osseous metaplasia of the joint synovium. Synovial chondromatosis usually involves a large joint and rarely occurs in the hand. Intra-articular synovial chondromatosis during the hand should be considered in the differential diagnosis of swollen, stiff or painful joints. Other possible diagnoses include osteoarthritis, rheumatoid arthritis, gout, trauma and chronic infection. Moreover, if enchondral ossification of loose bodies is not seen a diagnosis of synovial chondromatosis can not be made preoperatively. Intra-articular synovial chondromatosis is a benign condition and surgical synovectomy remains the most effective treatment. The authors report a case of synovial chondromatosis of the fifth metacarpophalangeal joint.

Key Words: Fifth metacarpophalangeal joint, Synovial chondromatosis

CASE REPORT

A 45-year-old, right-handed man presented with a 3-year history of pain, swelling and stiffness of the MP joint of the little finger of his right hand. He had no history of accident trauma or of a problem with other joints. Discomfort and progressive limitation of motion interfered with his daily activities. On examination, a non-tender, hard, and nodular mass about 2×2 cm in size was found and moderate tenderness along the joint line and a range of motion from 5° to 70° was evident, but sensation and perfusion in the little finger were...
normal. A plain X-ray showed diffuse calcification in the area of the swelling (Fig. 1), and magnetic resonance imaging (MRI) scan findings were consistent with synovial chondromatosis, which appeared to be localized to joint synovium and not to invade any surrounding structure (Fig. 2). We planned definitive surgery, i.e., loose body removal and complete synovectomy.

Under subscalenous regional anesthesia, with a tourniquet, surgical incision was performed through a longitudinal dorsal incision over the MP joint to expose the joint capsule. Division of the capsule revealed thickened inflammatory synovium, with numerous chondrous nodules in the capsule wall and lying free (Fig. 3A). These loose bodies were well contained within the dorsal pouch of synovium and capsule and between the joint surfaces. In edition the peripheral articular cartilage was eroded (Fig. 3B). Complete synovectomy was carried out and all loose bodies were removed.

Postoperatively, the patient was followed up for one year had a full active range of motion, with no MP joint instability.
Synovial Chondromatosis of the Metacarpophalangeal Joint

DISCUSSION

Synovial chondromatosis is an uncommon condition characterized by the formation of multiple cartilaginous nodules in synovial tissue. It generally involves a large joint, and its etiology has not been determined. The hand is rarely involved, but when it is, extra-articular structures, such as, the tenosynovium are usually affected. Synovial chondromatosis tends to present between the ages of 20 and 50 and it is twice as common in men. Its natural history is variable, and at presentation symptoms have usually been present from 3 months to 10 years. A correct diagnosis may not be made because of its rarity, especially if no calcification or ossification of cartilage is evident. MRI is the best imaging modality as it shows the cartilaginous portion of the lesion in addition to any ossified areas. Destruction of the joint space is rare, but if present, is confirmed at surgery. Our case had a positive radiologic finding, which included ossified loose bodies and periarticular erosion. However, the joint space was well preserved.

Treatment in most cases of intra-articular chondromatosis is by arthroscopy, loose body removal and synovectomy. This treatment is uniformly successful: all reported patients have experienced symptom resolution and an improved range of motion at follow-up.

Intra-articular synovial chondromatosis in the hand is a rare but benign condition, which should be considered in the differential diagnosis of patients presenting with a swollen, stiff or painful joint. The most effective treatment is surgical synovectomy.

REFERENCES

활액막 세포의 연골모세포로의 화생에 의해 발생하는 활액막 연골종증은 주로 슬관절, 골관절, 건관절, 주관절 등의 큰 관절을 침범하는 질환으로 수부에서는 매우 드문 것으로 알려져 있다. 수부 관절내 활액막 연골종증은 부종, 강직 및 동통의 증상을 나타내므로, 관절염, 류마토이드 관절염, 통풍, 외상, 만성 감염 등이 질환과 감별 진단에 필요하다. 유리체의 연골내 석회화가 보이지 않는다면, 숨전에 활액막 연골종증으로 진단하는 것이 어렵다. 관절내 활액막 연골종증은 양성으로 수술적 활액막 절제술이 가장 효과적인 치료로 알려져 있다. 저자들은 제5 중수지관절에 발생한 활액막 연골종증을 1예 경험하여 이를 문헌 고찰과 함께 보고하고자 한다.

색인 단어: 제5중수지관절, 활액막 연골종증