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Synovial chondromatosis of the shoulder

A case report

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Introduction

Synovial chondromatosis is a rare disease in which cartilaginous masses form in the synovial membrane. The cartilaginous foci may detach to form loose bodies within the joint, which may calcify or ossify. This condition is commonly seen in the knee, hip, or elbow, but is rare in the shoulder (Varma & Ramakrishna 1976, Volpin et al. 1980, Leo & Nocera 1985).

Case report

A 28-year-old male, physical education teacher was admitted in November 1985 with intermittent pain and progressive loss of mobility in the left shoulder during the previous 10 years. There was also a tendency to locking of the joint. There was no earlier history of infection or trauma. No other joints were affected. The patient was a diabetic, but he was otherwise healthy. Radiographic examination in 1980 showed calcifications in and around the shoulder. The symptoms were, however, moderate and no treatment was instituted.

There was a considerable loss of mobility of the left shoulder and upon palpation it was painful, particularly along the biceps tendon. There was also pain and crepitation on active and passive motion. Radiographs showed multiple loose bodies of varied shapes and sizes in the joint and along the biceps tendon (Figure 1). A preliminary diagnosis of synovial chondromatosis was made and the patient was operated on via an anterior incision. Sixty-eight loose bodies more than 4 mm in size and a great many smaller ones were removed from from the joint and the sheath of the long biceps tendon. Even more loose bodies were attached to the synovial membrane of the joint and tendon. A total synovectomy of the biceps tendon and partial synovectomy of the joint were carried out.

Histologic examination confirmed the diagnosis of synovial chondromatosis. In spite of regular physiotherapy, the patient developed a frozen shoulder. He was, however, relatively free of pain. Because of the tenotomy performed on the subscapular muscle, physiotherapy was limited during the first 2 months. As improvement of the mobility was slow, the patient was readmitted and the joint mobilized under general anesthesia 6 months postoperatively. After this, the mobility improved to active abduction of 135° and exterior rotation of 20–30°. The joint was painfree and without locking. Nine months postoperatively, the patient was back at full time employment and very satisfied with the result.

Figure 1. The left shoulder, with multiple calcifications in the joint and along the sheath of the long biceps tendon.

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Discussion

Synovial chondromatosis is usually monarticular and pain is the most frequent symptom. Stiffness and swelling of the joint may also occur. The symptoms may be intermittent or continuous. Untreated, the condition can cause secondary arthrosis. It is twice as frequent in men as in women (Jeffreys 1967, Crasselt & Willkommen 1974, Christensen & Paulsen 1975, Trias & Quintana 1976, Milgram 1977), and is most common between the third and fourth decade (Jeffreys 1967, Trias & Quintana 1976). In seven studies on synovial chondromatosis in 137 joints (Murphy et al. 1962, Jeffreys 1967, Crasselt & Willkommen 1974, Christensen & Paulsen 1975, Trias & Quintana 1976, Milgram 1977, Blümlein 1980), the distribution was as follows: knee, 82; hip, 23; elbow, 16; shoulder, 6; ankle, 5; wrist, 3; and other joints, 4 cases.

Synovial chondromatosis may be confused with other causes of loose bodies, such as arthrosis, tuberculosis, rheumatoid arthritis, neuropathic arthritis, osteochondritis dissecans, and osteochondral fracture. The diagnosis is obtained by histologic evidence of cartilage production in the synovial membrane by metaplasia. Synovial chondromatosis is a slowly progressing, benign condition, although malignant change has been reported (Lichtenstein 1972, Blümlein 1980).

Also the synovial membrane of bursae and tendons may manifest metaplasia (Karlin et al. 1981). Radiographic presence of multiple calcifications should suggest chondromatosis. The degree of calcification can vary, however. If the radiograph appears normal, the diagnosis can be made by arthrography or arthroscopy (Trias & Quintana 1976).

The treatment to be recommended is removal of the loose bodies, together with synovectomy as extensively as technically possible (Jeffreys 1967, Christensen & Paulsen 1975, Varma & Ramakrishna 1976, Trias & Quintana 1976, Blümlein 1980, Volpin et al. 1980).

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