Primary Synovial Chondromatosis of Shoulder: A Case Report

*Khandker HH,1 Islam S2

Primary synovial chondromatosis is benign monoarticular arthropathy of unknown aetiology. It commonly involves knee, elbow and hip in young adults but rare in shoulder. This type of case of primary synovial chondromatosis of shoulder may present as adhesive capsulitis which may help physicians. We found a case of primary synovial chondromatosis of shoulder joint which is presented in the case report.

Key words: Synovial chondromatosis, shoulder

Introduction

Primary synovial chondromatosis is a common orthopaedic problem. The exact synovial stimulus which results in the rapid development of this spectacular synovial metaplastic process is unknown.1 A preexisting primitive embryonic rest has been postulated to be the aetiological basis for the disease.2,3 In cultures of fourteen surgical specimens obtained by Jeffreys in 1967, no growth of organism occurred. Trauma has been implicated as a precipitating factor for the development of this disease.2,4 The cartiliginous metaplasia within the synovial villi is considered by some to be neoplastic.1,2,3 Although a few isolated cases of malignant have been reported.3,5,6 Synovial chondromatosis most commonly involves the knee, elbow and hip in young adults.4,7,8 Occurrence in shoulder and ankle is rare and for that reason the following case of synovial chondromatosis of the shoulders is presented.9

Case report:

A twenty five years old females presented with pain and restricted movement at right shoulder for three months without history of trauma. For this she was treated by village kabiraj by massaging with oil. On roentgenogram, there were multiple radiopaque loose bodies in right shoulder (figure 1). On 5 July 2008 arthrotomy was done by Anterior Henry approach. Approximately 90 white, oval loose bodies, measuring about 0.3 cm to 0.7 cm in diameter were removed (figure 2). The glistening white loose bodies were in sharp contrast to brilliant velvety hypertrophied synovium with its papillary projection. Erosion of articular surface had not occurred. Partial synovectomy was accomplished.

The right shoulder was immobilized by collar cuff sling for 10 days and after then, she was allowed for both active and passive movement. After three months on follow up, shoulder movement is near about normal with slight pain which does not need any medication. Roentgnogram studies were normal.

1. *Dr. Hamidul Haque Khandker, Professor, Orthopaedics and traumatology, Dinajpur Medical College.
2. Dr. Shafiqul Islam Assistant Professor, Orthopaedics and traumatology, Rangpur Medical College.

*For correspondance
Figure 1. X-Ray shows multiple radiopaque loose bodies in right shoulder

Figure 2. White, oval loose bodies, measuring about 0.3 cm to 0.7 cm in diameter.

Discussion
The diagnosis of acute primary synovial chondromatosis (fisher’s group III, diffuse) is primarily based on history of rapid onset of a monoarticular disorder in a young adult and on the gross pathological appearance of joint. Roentgenogram may or may not disclose calcific radiopacities. The four gross features which establish the diagnoses are: widespread synovial reaction, ectopic formation of the chondroid matrix under the synovial membrane, multiple small, pearl-white loose bodies and absence of surface destruction of joint cartilage. However, synovial metaplasia also occurs secondarily in the more common traumatic and degenerative joint disorders. The microscopic sections of localized synovial involvement may be identical with the primary neoplastic disorder, synovial chondromatosis. Synovial chondromatosis progresses through various stages of activity. In the acute florid stage of the disease, the entire joint synovium is hypertrophied and hyperemic with numerous foci of cartilage formation. Small cartilaginous fragments are extruded into the joint and dystrophic calcification may occur. This gives rise to the designation synovial osteochondroinatosis. However, the term chondromatosis is preferred to differentiate this primary synovial disease from the many destructive joint disorders with chondritic and osteochondritic loose bodies (Fisher’s Group I and Group II).

During the intermediate stage, the acute synovial reaction gradually subsides. The free cartilaginous loose bodies undergo degenerative, proliferative (enlargement on multiplication), or resorptive changes, depending on stresses peculiar to the joint involved and location within the joint. Endochondral bone formation may occur but requires a blood supply and is confined to loose bodies with a pedicle or to free loose bodies that have regained a synovial attachment. In the late stages of the disease, all the criteria for diagnosis of primary synovial chondromatosis no longer exist. The generalized synovial reaction reverts to normal. Secondary osteoarthritis results from the continual presence of loose bodies within the joint over a long period of time. This in turn may lead to localized secondary synovial chondromatosis, as well as to osteochondritic loose bodies formed by detached osteophytes. Therefore, in older cases of long duration only a presumptive diagnosis of primary synovial chondromatosis can be made on the basis of the history and
the number and character of the loose bodies. Synovial chondrosarcoma has to be considered in the differential diagnosis of synovial chondromatosis. Since both lesions may exhibit synovial calcification and atypical multinucleated cartilage cells.\textsuperscript{11,12} The diagnosis of synovial chondrosarcoma is established on the basis of gross evidence of a large, lobulated synovial lesion with extra-articular invasion and histological sections which exhibit numerous multinucleated cartilage cells having bizarre hyperchromatic nuclei. Secondary synovial chondromas, attached on free, which occur in association with traumatic internal derangement and osteoarthritis, are distinguished by the existence of primary joint disease and localized synovial reaction. Traumatic joint surface separations and detached chondro-osteophytes represent true osteochondritic loose bodies and are readily differentiated. Loose bodies resulting from traumatic disruption of epiphyses, joint fibrocartilage, or articular cartilage exhibit the gross and histological features of the normal joint structures involved (Fisher’s Group II). Chondro-osteophytes, usually no more than two or three in number, are often large and are found in a diseased or arthritic joint (Fisher’s Group I).

Though acute synovial chondromatosis of shoulder rear, if it is diagnosed and treatment is early are the prognosis is fair. Acute primary synovial chondromatosis is adequately treated by removal of the loose bodies and synovectomy.\textsuperscript{1,5,8,9} Postoperative prognosis is dependent on the stage of the disease at the time of surgery.

**References**