SOCIEDADE BRASILEIRA DE ORTOPEDIA E TRAUMATOLOGIA

RBO REVISTA BRASILEIRA DE ORTOPEDIA

www.rbo.org.br

Case report

Bilateral symmetrical synovial chondromatosis of shoulder: a case report

Balakrishnan M. Acharya[a], *Pramod Devkota*[b,*], *Suman K. Shrestha*[a], *Nabeesman S. Pradhan*[a], *Shiraz Ahmad*[b]

[a] *Department of Orthopaedic Surgery, Patan Hospital, Lalitpur, Nepal*
[b] *Department of Orthopaedic Surgery, Suri Seri Begawan Hospital, Kuala Belait, Brunei*

ARTICLE INFO

Article history:
Received 8 March 2017
Accepted 17 April 2017
Available online 17 May 2017

Keywords:
Shoulder
Chondromatosis, synovial/pathology
Chondromatosis, synovial/surgery
Chondromatosis, synovial/diagnostic imaging

ABSTRACT

Synovial chondromatosis is a benign arthropathy rarely seen in diarthrodial joints. Extra-articular bilateral symmetrical synovial chondromatosis of shoulder is the rarest variety. The diagnosis is established with the help of imaging modalities and histopathological examinations. This report describes a case of a 39-year-old woman who presented with symmetrical, progressively increasing swelling over the bilateral shoulder region, of 12–18 months duration, with dull ache and restricted movements of the shoulder joints. Magnetic resonance imaging (MRI) and ultrasonography (USG) revealed large bilateral subacromial-subdeltoid bursal swelling with loose floating bodies. Surgical excision of extensive bilateral bursa was performed at four weeks of interval. Histopathological examination revealed synovial chondromatosis on either side. Postoperative recovery occurred without complications.

Condromatose sinovial simétrica bilateral do ombro: relato de caso

Palavras-chave:
Ombro
Condromatose sinovial/patologia
Condromatose sinovial/cirurgia
Condromatose sinovial/diagnóstico por imagem

RESUMO

A condromatose sinovial é uma artropatia benigna raramente vista em articulações diartrodiais. A condromatose sinovial simétrica bilateral extra-articular do ombro é a variedade mais rara. O diagnóstico é estabelecido com a ajuda de exames de imagem e histopatológicos. Este relato descreve o caso de uma paciente de 39 anos de idade, com aumento de volume progressivo simétrico sobre a região bilateral do ombro com 12-18 meses de duração com dor entorpecido e limitação dos movimentos das articulações do ombro. A ressonância magnética e a ultrassonografia revelaram um grande aumento de volume da bursa subacromial subdeltoidea bilateral com corpos livres flutuantes.

* *Corresponding author.*
E-mail: devkotap@gmail.com (P. Devkota).
https://doi.org/10.1016/j.rboe.2017.05.009

A excisão cirúrgica extensa da bursa bilateral foi realizada com quatro semanas de intervalo. O exame histopatológico revelou condromatose sinovial em ambos os lados. A recuperação pós-operatória transcorreu sem complicações.

Introduction

Synovial chondromatosis is a rare benign condition with the formation of intra-articular cartilaginous nodules in the synovium of joints.[1] It is a mono-articular arthropathy rarely seen in diarthrodial joints and most commonly involved in the knee, followed by the hip, elbow, wrist, ankle and least often in the shoulder.[2] Most often seen on 30–50 years of age and three times more in males than females.[3] The exact reasons for the development of synovial chondromatosis are not known, but it is assumed that in the pathogenesis, the synovial chondroid metaplastic focus becomes peduncular then by breaking off, becomes free fragment in the joint which may undergo endochondral ossification or cause erosive damage to the joint.[4]

Extra-articular bilateral symmetrical synovial chondromatosis of shoulder is a rarest variety. Diagnosis is established with the help of Imaging modalities and histopathological examinations. We report one case of bilateral symmetrical synovial chondromatosis of shoulder joint on a woman which was treated by total synovectomy.

Case report

Thirty nine year old woman complain of symmetrical progressively increasing swelling over bilateral shoulder region for the past 12–18 months of time (Fig. 1). She was having dull ache, shoulder discomfort after activities and restricted shoulder joint movements. She denied any history of trauma, fever, joints pain and systemic illness. General physical examination and systemic examination were unremarkable.

On the deltoid region of both shoulder joints obvious swelling was inspected and palpated. Right side was 6 cm × 7 cm big and left side was 8 cm × 7 cm in size. The mass was globular soft, non tender, mobile, and no associated skin changes. Discomfort notable at extremes of motion. Range of motion of both shoulder joints were painful beyond 110° abduction, resisted active motion was also painful. Shoulder impingement signs were positive. Distal neuro-vascular status was intact.

Radiograph of both shoulder joints showed no bony lesions. Ultrasonography (USG) (Fig. 2) and magnetic resonance imaging (MRI) (Fig. 3) revealed large bilateral subacromial-subdeltoid bursal swelling with loose floating bodies.

Operation was performed on both sides at four weeks of interval. Under general anesthesia, excisional biopsy was done using deltoid splitting approach. Huge bursa was seen below the deltoid muscle and dissected, excised which contain copious amount of white grape like particles with straw colored fluid (Fig. 4). Histopathology examination also confirmed (Fig. 5) synovial chondromatosis. Post operatively recovered without complications. After three years of follow up, there are no signs of recurrence and the shoulder joints have good range of motion.

Discussion

Synovial chondromatosis of shoulder have been rarely reported in the literature and most reported are case series only. The etiology of synovial chondromatosis is not known

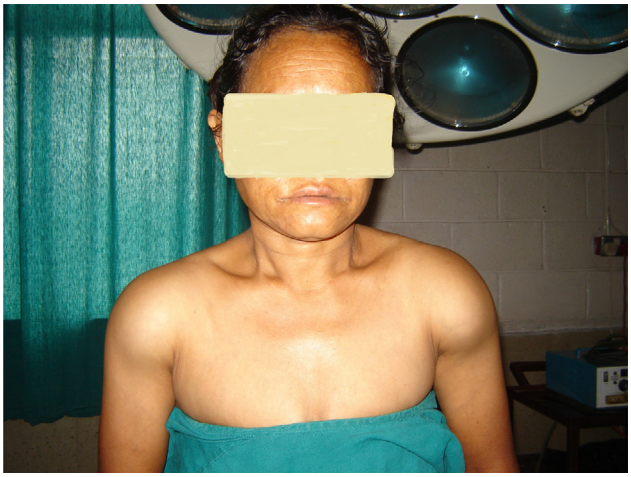

Fig. 1 – Clinical pictures of the patient with bilateral symmetrical swelling on the shoulders joint.

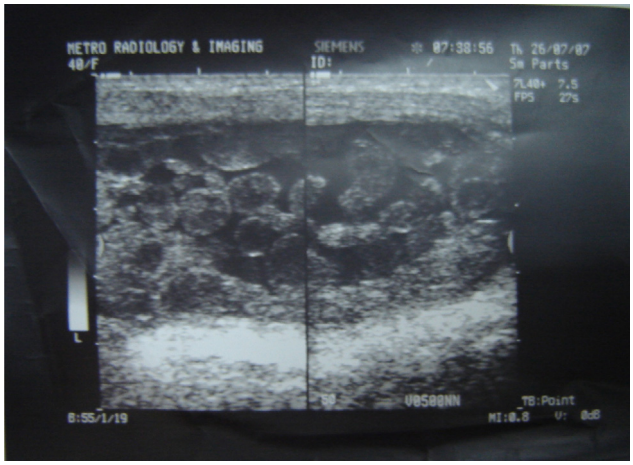

Fig. 2 – USG of the lump showing grape like particles inside the lump.

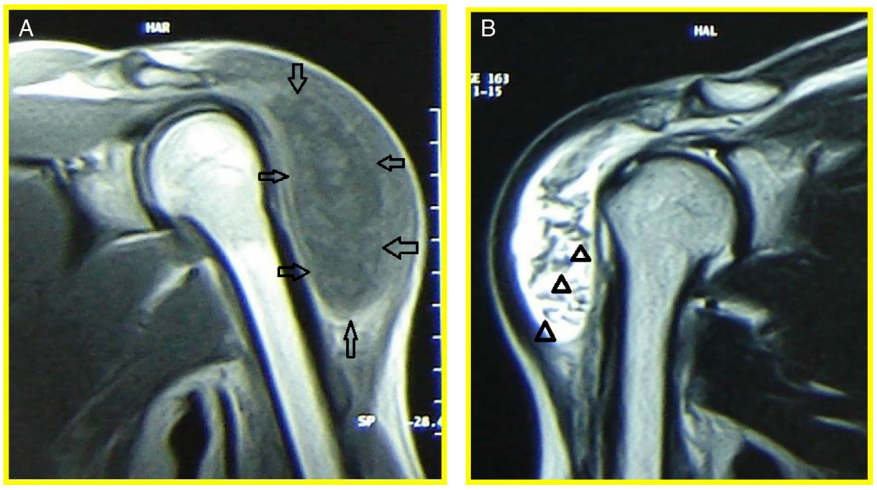

Fig. 3 – MRI of both shoulder – large homogeneous intermediate signal intensity lesion similar to that of muscle on T1 weighted images in the subdeltoid aspect of the bilateral shoulder (arrows) which appear high signal intensity on T2 weighted images. Multiple small discrete nodular areas (arrow heads) of low signal intensity within the lesion also noted in T2 weighted image.

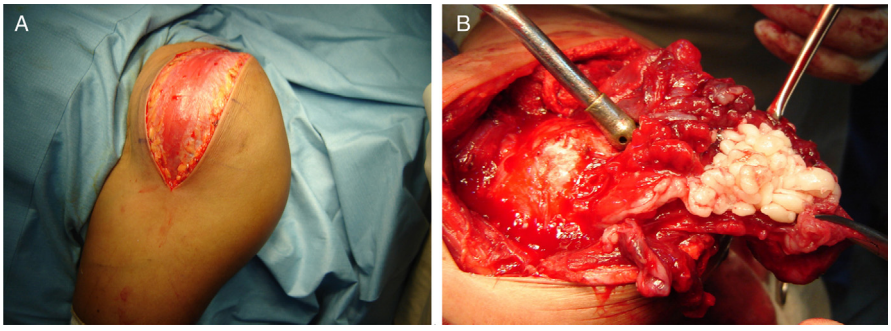

Fig. 4 – Deltoid splitting surgical approach was used and huge bursa below deltoid which contain copious amount of white grape like particles with straw colored fluid.

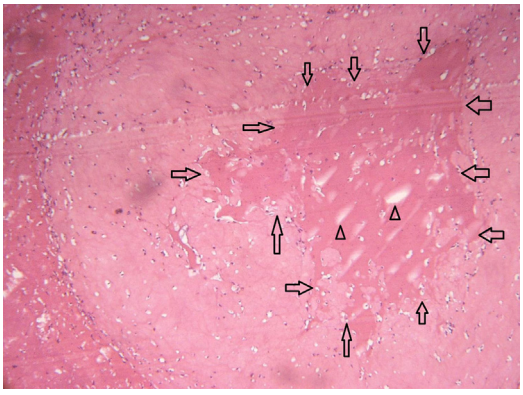

Fig. 5 – Histopathology (HE 40×). Nodule of cartilage composed of cartilaginous matrix and scattered chondrocytes (arrows) seen. Clustering of chondrocytes is focally and the chondrocytes are relatively uniform with mild nuclear hyperchromasia. Osseous changes is noted in the center of the nodule (arrow heads), which confirmed the synovial chondromatosis.

but it is classified as primary or secondary and the secondary is due to trauma, rheumatic arthritis, tubercular arthritis, osteochondritis dissecans.[2] The clinical features of joint chondromatosis are not specific but generally restriction of the joint movement is the most common. Also may present local pain and tenderness with swelling on the joint. X-ray may not show clearly on not calcified swellings and magnetic resonance imaging (MRI) scan is needed for clear findings.[5,6]

Milgram[7] proposed three stages of disease process and at stage one there is active intrasynovial disease but no free fragments, at stage two there is active intrasynovial proliferation and lesions are seen in transition to free fragments and at third stage there are multiple osteochondral free fragments but active intrasynovial disease is not seen.

The classic treatment for this is open arthrotomy, synovectomy and complete removal of the free fragments.[8] The loose bodies may arise from the synovium; there is a reported case of recurrence when synovial membrane is not excised.[9]

The recurrence rate of synovial chondromatosis ranges from 3.2% to 22.3%.[8] Recurrent synovial chondromatosis at the same location favors diagnosis malignant transformation to synovial chondrosarcoma.[10] So it is recommended for close follow up.

Conflicts of interest

The authors declare no conflicts of interest.

REFERENCES

1. Hocking R, Negrine J. Primary synovial chondromatosis of the subtalar joint affecting two brothers. Foot Ankle Int. 2003;24(11):865–7.
2. Duymus TH, Yucel B, Mutlu S, Tuna S, Mutlu H, Komur B. Arthroscopic treatment of synovial chondromatosis of the shoulder: a case repot. Ann Med Surg (Lond). 2015;4(2):179–82.
3. Ranalletta M, Bongiovanni S, Calvo JM, Gallucci G, Maignon G. Arthroscopic treatment of synovial chondromatosis of the shoulder: report of three patients. J Shoulder Elbow Surg. 2009;18(3):e4–8.
4. Fowble VA, Levy HJ. Arthroscopic treatment for synovial chondromatosis of the shoulder. Arthroscopy. 2003;19(1). E2.
5. Jung KA, Kim SJ, Jeong JH. Arthroscopic treatment of synovial chondromatosis that possibly developed after open capsular shift for shoulder instability. Kne Surg Sports Traumatol Arthrosc. 2007;15(12):1499–503.
6. Urback D, McGuigan FX, John M, Neumann W, Ender SA. Long-term results after arthroscopic treatment of synovial chondromatosis of the shoulder. Arthroscopy. 2008;24(3):318–23.
7. Milgram JW. Synovial osteochondromatosis; a histopathological study of thirty cases. J Bone Joint Surg Am. 1977;59(6):792–801.
8. Davis RI, Hamilton A, Biggart JD. Primary synovial chondromatosis: a clinicopathologic review and assessment of malignant potential. Hum Pathol. 1998;29(7): 683–8.
9. Ogilvie-Harris DJ, Saleh K. Generalized synovial chondromatosis of the knee: a comparison of removal of the loose bodies alone with arthroscopic synovectomy. Arthroscopy. 1994;10(2):166–70.
10. Anract P, Katabi M, Forest M, Benoit J, Witvoet J, Tomeno B. Synovial chondromatosis and chondrosarcdoma. A study of the relationship between these two disease. Rev Chir Orthop Reparatrice Appar Mot. 1996;82(3): 216–24.