International Journal of Research in Orthopaedics
Tiwari A et al. Int J Res Orthop. 2024 Nov;10(6):1411-1414
http://www.ijoro.org

DOI: https://dx.doi.org/10.18203/issn.2455-4510.IntJResOrthop20243144

Case Report

Insights into acromioclavicular joint ganglionic cyst: diagnosis and management

Atit Tiwari, Ritesh Soni*

Department of Orthopaedics, Shivam Orthocare Hospital, Una, Himachal Pradesh, India

Received: 20 September 2024
Accepted: 16 October 2024

***Correspondence:**
Dr. Ritesh Soni,
E-mail: riteshsoni56@yahoo.co.in

ABSTRACT

Acromioclavicular joint (ACJ) cysts are an uncommon and unusual sequela associated with shoulder pathophysiology1.It is a rare clinical entity that can affect patients' cosmetic appearance as well as daily living activities. Limited number of case reports have been published till date in literature. This case report presents a rare example of a ganglion cyst taking origin from acromio clavicular joint in a 62-year-old female patient, outlining the clinical presentation, diagnostic approach, and successful surgical management.

Keywords: AC joint arthritis, Acromioclavicular cyst, Ganglionic cyst, Rotator cuff tear, Geyser sign

INTRODUCTION

Ganglion cysts are synovial cysts that are filled with gelatinous mucoid material and commonly encountered in orthopaedic clinical practice. Although the exact etiology of the development of ganglion cysts is unknown, they are believed to arise from repetitive micro trauma resulting in mucinous degeneration of connective tissue, with acromioclavicular joint being a less frequent site. Acromioclavicular (AC) joint ganglion cysts are rare lesions often seen in elderly patients, could be due to communication between glenohumeral and acromioclavicular joints when rotator cuff is injured and in cases where rotator cuff is intact it can occur as a sequela of AC joint degenerative arthritis.[2] The earliest cases of AC cysts in association with rotator Cuff tears were described by Craig in 1984 and 1986.[3,4] This case report aims to throw light on this rare medical condition which can sometime lead to delay in diagnosis and management and simultaneously affecting patients' daily life.

CASE REPORT

A 61-year-old female presented in OPD with the chief complaints of mild pain and swelling over her right shoulder. Swelling was present for the last three months and gradually increasing in size. There was no history of trauma. On clinical examination, a 5×4×3 cm fluctuant mass was present over right acromioclavicular joint, mild tenderness localized to AC joint, well circumscribed, mobile, with no active signs of inflammation like erythema, warmth (Figure 1). The range of motion was painless and functional with forward flexion 0-1600 and abduction 0-1500.

Evaluation

Plain radiography revealed advanced cuff tear arthropathy with cranial migration of the humeral head (Hamada Grade 4) and severely arthritic AC joint.[5] A soft tissue shadow was visible over the AC joint (Figure 2a). MRI Scan revealed a large homogeneous ganglionic cyst of 64×28×62 mm superior to AC joint with near complete tear of supraspinatus and infraspinatus. Geyser sign was not present (Figure 2b).

Treatment

Surgical excision was planned for the cyst after discussing high recurrence rates of needle aspiration. Patient was

positioned in beach chair position. Incision was taken along Langerhans lines. Jelly like mucinous material popped out of the cyst as soon as it was opened (Figure 3).

Figure 1: Clinical photograph showing massive ACJ ganglion cyst over right shoulder.

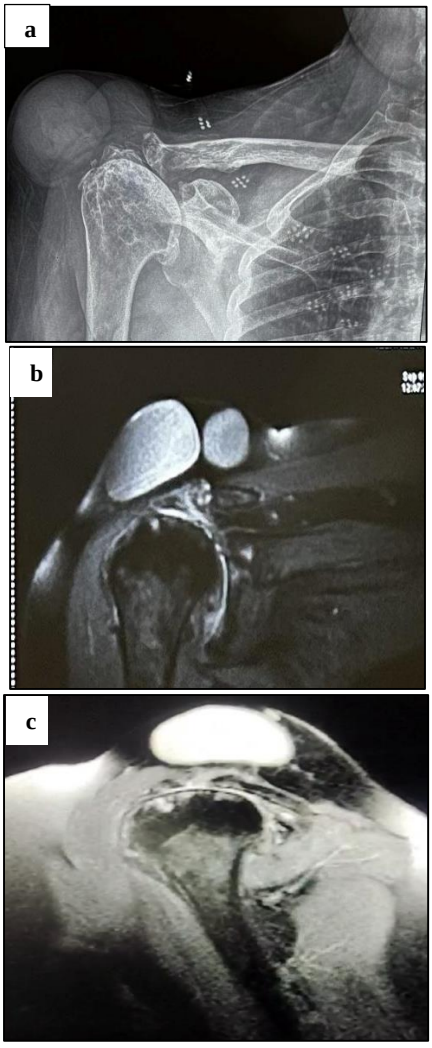

Figure 2: (a) X ray showing soft tissue shadows over ACJ with cuff tear arthropathy and ACJ arthritis. (b, c) MRI images (sagittal and coronal) suggestive of homogeneous cyst above AC joint without any communication with glenohumeral joint.

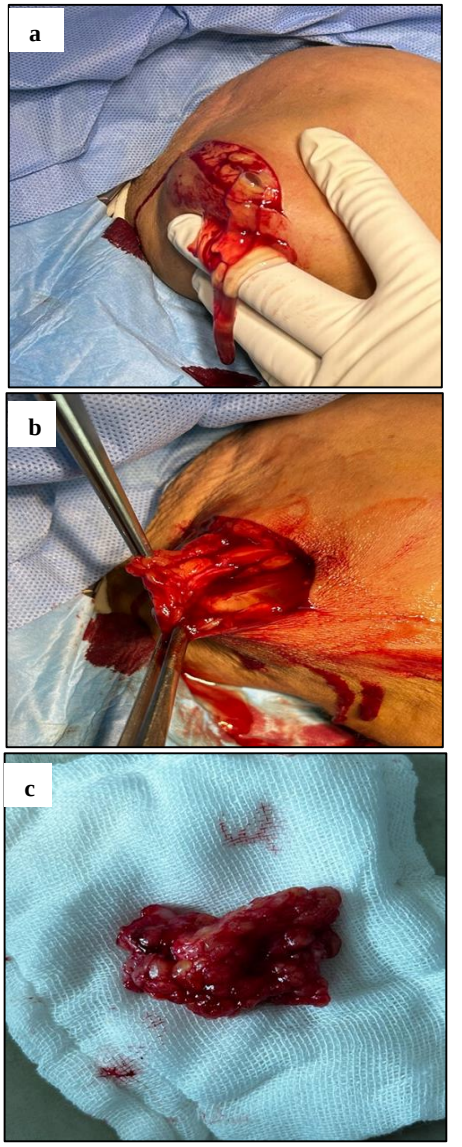

Figure 3: (a) Mucinous material coming out of the cyst. (b) intra-op picture of cyst wall. (c) gross specimen of the cyst excised en bloc.

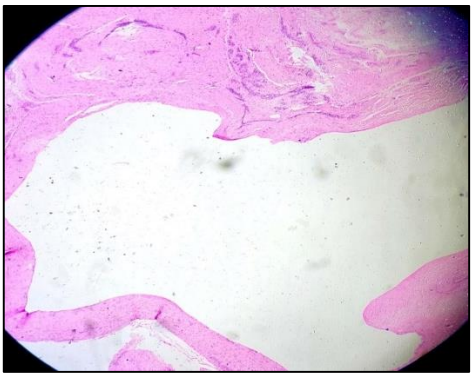

Figure 4: Cystic structures with no true epithelial lining and sparse lymphocytic infiltrates.

Cyst was excised en bloc, 8-10 mm of the lateral clavicle was removed using micro saw and double breasting of the AC joint capsule was done. Histopathological examination of the specimen revealed multiple cystic structures with no true epithelial lining and sparse lymphocytic infiltrate (Figure 4).

DISCUSSION

AC joint ganglionic cysts can occur in two forms as described in literature. Type 1 mainly occurs secondary to AC joint degenerative arthritis. These degenerative changes cause synovial irritation leading to excessive fluid production which results in cyst formation superficial to the joint without any connection to glenohumeral joint. Type 2 cyst occur in conjunction with massive rotator cuff tear arthropathy associated with proximal migration of humeral head and subsequently eroding AC joint as well.

Excessive production of the synovial fluid by glenohumeral joint and formation of one-way valve causes the escape of the synovial fluid into the AC joint capsule creating the ganglion cyst. MRI or Shoulder arthrogram can show this migration of fluid as 'geyser sign' as described by Craig et al.[3]

Treatment guidelines mentioned in the literature favors surgical intervention as non-operative management in the form of aspiration is associated with high recurrence rate Groh et al, managed four ACJ synovial cysts associated with gleno-humeral joint osteoarthritis along with irreparable rotator cuff tear by performing shoulder hemi arthroplasty, which proved to be an effective treatment.[6,7]

Utrilla et al, performed excision of the cyst, acromioplasty along with closure of the rotator cuff defect with a duramater allograft in a case of ACJ cyst associated with irreparable cuff tear with unsatisfactory functional results.[8] Le Huec et al, treated three patients with ACJ cysts and massive rotator cuff tears with excision of the cyst, removal of the lateral clavicle end and synovectomy of the pathological humeral-acromial joint.[9] Rohit et al. in his report mentioned complete resolution of the AC joint cyst by using only conservative management.[10]

Resection of lateral third of clavicle can prevent recurrence by avoiding pinch valve effect and should be done in presence of irreparable cuff tear.[11,12] The different surgical options available include humeral head replacement, distal clavicular resection, complete shoulder arthroplasty, arthroscopic debridement with rotator cuff tear repair, and shoulder arthrodesis.[13,14] In order to improve the excision location, Skedros et al, relocated the anterior deltoid and used an allograft patch to cover the surfaces of the removed bones and the remaining AC joint ligaments.[15]

In our case report, the patient was having mainly cosmetic deformity in the form of visible swelling with mild pain confined to the AC joint (VAS pain score 1/10). Radiographic investigations suggested severe cuff tear arthropathy with AC joint degenerative arthritis. As her daily activities were not affected and range of movement was unrestricted and painless, we did nothing for cuff tear. Our surgery involved en bloc resection of the cyst, lateral clavicle resection and water tight closure of the AC joint capsule.

CONCLUSION

As there are limited number of cases in the literature about AC joint ganglionic cyst, various surgical options are available without any proven superiority of one method over other as long-term studies are awaited. We would recommend lateral end clavicle resection and en bloc excision of the cyst along with water tight closure of the AC joint capsule as preferred surgical option in treatment of AC joint ganglionic cyst associated with rotator cuff tear and functionally good shoulder.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

REFERENCES

1. Hiller AD, Miller JD, Zeller JL. Acromioclavicular joint cyst formation. Clin Anat. 2010;23(2):145-52.
2. De Maio F, Di Marcantonio A, De Luna V, Caterini A, Tresoldi I, Farsetti P. Synovial cyst of the acromioclavicular joint with and without rotator cuff tear: A case series of two patients. Int J Surg Case Rep. 2020;75:390-3.
3. Craig EV. The geyser sign and torn rotator cuff: clinical significance and pathomechanics. Clin Orthop Relat Res. 1984;(191):213-5.
4. Craig EV. The acromioclavicular joint cyst. An unusual presentation of a rotator cuff tear. Clin Orthop Relat Res. 1986;2:189-92.
5. Brolin TJ, Updegrove GF, Horneff JG. Classifications in Brief: Hamada Classification of Massive Rotator Cuff Tears. Clin Orthop Relat Res. 2017;475(11):2819-23.
6. Gumina S, Candela V, Passaretti D. Acromioclavicular joint cyst in ASA 3-4 patients. Whether and how quickly it recurs after aspiration and steroid injection. Acta Orthop Belg. 2016;82(2):161-5.
7. Groh GI, Badwey TM, Rockwood CA. Treatment of cysts of the acromioclavicular joint with shoulder hemiarthroplasty. J Bone Joint Surg Am. 1993;75:1790–4.
8. Utrilla LA, Gomez ML, Aznar PA, Gomez CR. Rotator cuff tear and acromioclavicular joint cyst. Acta Orthop Belg. 1995;61:144–6.
9. Le Huec JC, Zipoli B, Schaeverbeke T, Moinard M, Chauveaux D, Le Rebeller A. Acromio-clavicular joint cyst. Surgical treatment. Acta Orthop Belg. 1996;62:107–12.

10. Rohit A.S., Bruce A.H., Stuart M.H. Management of a massive acromioclavicular joint cyst: the geyser sign revisited. Shoulder Elbow. 2013;5:62–4.
11. Mullett H, Benson R, Levy O. Arthroscopic treatment of a massive acromioclavicular joint cyst. Arthroscopy. 2007;23:4461–4.
12. Postacchini F, Perugia D, Gumina S. Acromioclavicular joint cyst associated with rotator cuff tear. A report of three cases. Clin Orthop Rel Res. 1993;294:111–3.
13. Cooper HJ, Milillo R, Klein DA., DiFelice G.S. The MRI geyser sign: acromioclavicular joint cysts in the setting of a chronic rotator cuff tear. Am Jrthop (Belle Mead, NJ). 2011;40:118-21.
14. Sarman H, Celik M, Bala MM. A rare cause of shoulder pain: Ganglion cyst of the acromioclavicular joint. Osteol Rheumatol Open J. 2016;1(1):20-22.
15. Skedros JG, Knight AN. Massive acromioclavicular ganglionic cyst treated with excision and allograft patch of acromioclavicular region. J Shoulder Elbow Surg. 2012;21:1–5.

Cite this article as: Tiwari A, R Soni. Insights into acromioclavicular joint ganglionic cyst: diagnosis and management. Int J Res Orthop 2024;10:1411-4.