



Case Report

Management of haemarthrosis induced anterior shoulder dislocation with arthroscopic washout and haemostasis

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ABSTRACT

Spontaneous haemarthrosis is a known and previously described complication of anticoagulant therapy. The knee and the shoulder joints are amongst the most commonly affected joints [1,2].

Subsequent dislocation/subluxation of the shoulder is also previously described reporting acute anterior shoulder dislocation complicating a non-traumatic haemarthrosis [3], and a further report of a severely subluxed glenohumeral joint that was initially mis-diagnosed as anterior atraumatic dislocation [4]. Both cases were treated by aspiration of the joint, with supplementary manipulation required in the former.

Here we report the additional use of shoulder arthroscopy and haemostasis to achieve concentric reduction of an atraumatic shoulder dislocation secondary to haemarthrosis, in a patient on warfarin.

Case report

An 88 years old woman presented to the Emergency Department with a history of acute onset right shoulder pain and swelling. Her pain was initially experienced while sitting reading the newspaper and she denied any recent history of falls or trauma. She was being treated with warfarin for atrial fibrillation.

Clinical examination confirmed a swollen shoulder in the absence of neurological or vascular deficits. There was loss of movement and function due to pain. Plain radiographs of the shoulder (Figs. 1, 2) confirmed an anterior dislocation and her INR was 4.5.

Initial attempts at manipulation in the emergency department under sedation were unsuccessful and the decision to perform reduction in theatre was taken. She underwent pre-operative optimization including reversal of her anticoagulation. This meant that formal management in theatre occurred 39 h following presenting to the Emergency department.

A pre-operative CT scan confirmed the anterior dislocation in the absence of any other obvious structural abnormality (Fig. 3).

Management

Under general anesthesia, aspiration of the glenohumeral joint was performed prior to manipulation under image intensifier control. It appeared that reduction had been achieved on the initial AP view of the shoulder (Fig. 4).

However, the axial view (although suboptimal) clearly showed a non-concentric reduction (Fig. 5) with the humeral head sitting anteriorly.

A further axial view was taken with the arm internally rotated, simulating the immobilization position, the anterior subluxation

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Fig. 1. AP view of right shoulder upon presentation.



Fig. 2. Axial view of right shoulder upon presentation.

was more evident suggesting that there was residual hemarthrosis (Fig. 6).

Further aspiration attempts were unsuccessful and the decision to proceed to arthroscopic washout and haemostasis.

The patient was subsequently placed into a beach chair position; arthroscopy was conducted through a standard posterior viewing portal and an anterior working portal was created through the rotator interval. The findings were of a large hemarthrosis with blood clots, anterior subluxation of the joint, though no obviously structural abnormality.

The haematoma was washed out and an actively bleeding vessel was identified within the lining of the posterior capsule, which was coagulated using a radio frequency probe and the shoulder reduced. The rotator cuff appeared degenerative though there was no obvious tear or communication with the sub-acromial space.



Fig. 3. CT scan axial cut of right shoulder upon presentation.



Fig. 4. Intra operative image Intensifier AP view post manipulation.

Further confirmation of anatomical concentric reduction was obtained through an image intensifier axial view (Fig. 7).

The patient had an uneventful recovery and was discharged home following a standard physiotherapy/rehabilitation for anterior shoulder dislocation. She had restarted subsequently regular anticoagulant therapy.

Discussion

This is a presentation of spontaneous atraumatic anterior shoulder dislocation secondary to anti-coagulation which has been previously described. The unusual aspect in this case that aspirating the joint and manipulation under anesthesia have failed to



Fig. 5. Intra operative image Intensifier Axial view post manipulation.



Fig. 6. Intra operative image Intensifier Axial view in immobilization position.

achieve concentric reduction. In this particular case optimization and reversal of anticoagulation meant that formal management in theatre was delayed by more than 39 h, we suspect full evacuation of heamarthrosis/haematoma was not possible by then.

We would advise that delayed aspiration and manipulation for spontaneous dislocation of the shoulder to be avoided.

Once failed manipulation/achieving stable concentric reduction is recognized then arthroscopic washout should be the standard management. Arthroscopy allows diagnostic evaluation of the joint, as well as washout of any haematoma and blood clots that cannot be aspirated. Additionally, arthroscopy also allows achieving haemostasis through coagulation of any actively bleeding vessels.



Fig. 7. Intra operative image Intensifier Axial view post arthroscopy.

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References

- [1] George E. McLaughlin, Daniel J. McCarty Jr., Bernard L. Segal, Hemarthrosis complicating anticoagulant therapy; report of three cases, *JAMA* 196 (11) (1966) 1020–1021, <https://doi.org/10.1001/jama.1966.03100240154044>.
- [2] J.C. Gerster, J.P. Wauters, M. Waldburger, Y. Saudan, Hemarthroses complicating anticoagulant therapy (heparin, oral anticoagulants), *Schweiz. Med. Wochenschr.* 107 (33) (1977 Aug 20) 1170–1172.
- [3] Lenaa Wirth, Paulb Cornelius, Spontaneous haemarthrosis causing anterior shoulder dislocation, *Eur J Emerg Med* 17 (6) (December 2010) 316–317, <https://doi.org/10.1097/MEJ.0b013e328332bcc3>.
- [4] Christine B. Davis, Richard M. Nowak, Anticoagulant-induced Hemarthrosis Presenting as Anterior Shoulder Dislocation, Henry Ford Hospital, Department of Emergency Medicine, Detroit, MI, 2014, <https://doi.org/10.1016/j.ajem.2014.05.042>.