Voluntary Anterior Dislocation of the Shoulder in a 10-Year-Old Child Treated Surgically

Mohit Kumar Patralekh • Lalit Maini • Mukesh Kalra

Received: 23 November 2011 / Accepted: 30 November 2011 / Published online: 30 December 2011
© Society of the Hand & Microsurgeons of India 2011

Dear Sir,

Voluntary dislocation of the gleno-humeral joint, a rare condition, is said to exist when a person is able to dislocate one or both shoulders in one or more direction willfully. It is difficult to treat as several patients have psychiatric comorbidity and use this unique ability to grab social attention. Treatment usually suggested consists of skillful neglect or a prolonged physiotherapy programme for 3–6 months, aimed at strengthening the rotators and deltoid. Some studies are however encouraging surgical management of this condition (especially in psychologically normal patients) [1–4].

A 10-year-old child presented with ability to dislocate his right shoulder anteriorly, repeatedly at his will. There was no significant history of trauma, any gross congenital anomaly, paralytic disorder or local infection. The patient also had a distressing sensation of instability in shoulder during carrying weight and overhead activities. On clinical examination there

was no local swelling, muscular wasting, deformity of shoulder, clavicle, sternoclavicular or acromioclavicular joints, scar or sinus. Scapulae were symmetrical and at normal level bilaterally. No local tenderness or crepitus was appreciated. Range of motion at both shoulders was full and painless. Sulcus test and apprehension sign were present on the affected side. There was no evidence of any distal neurovascular deficit or generalized ligamentous laxity. The patient was able to demonstrate anterior dislocation and reduction of his right shoulder voluntarily. [Fig. 1] X-rays of shoulders and CT scan with 3D reconstruction were normal. Psychiatric consultation didn't reveal any personality disturbance. A physiotherapy programme to strengthen the rotator cuff muscles didn't help much. Written informed consent was taken from the patient and his parents for surgery and also for publication.

We managed this patient by an inferior capsular shift procedure with postoperative chest arm immobilization. As described by Neer and Foster the shoulder was exposed through delto-pectoral approach [3]. Capsular volume was found to be increased with marked redundancy inferiorly. The opening between the superior and middle glenohumeral ligaments was closed with non-absorbable sutures. A T-shaped incision was made between the middle and inferior-glenohumeral-ligaments, detaching the capsule and ligaments from the neck of the humerus anteriorly, inferiorly and to the posterior part of the neck. Double-breasting was then performed to eliminate the redundancy with arm in slight flexion and 10° external-rotation and the subscapularis stump closed over it.

Post-operatively patient was kept on shoulder immobilization for 6 weeks after which an arm sling was given and shoulder pendular exercises begun. External-rotation, abduction and flexion were not allowed. Abduction and flexion were allowed at 3 months and rotations at 4 months, discarding arm-sling. The rehabilitation goal for motion was

L. Maini
Maulana Azad Medical College and associated hospitals,
University of Delhi,
Delhi, India

M. Kalra
Lady Hardinge Medical College and associated hospitals,
University of Delhi,
Delhi, India

M. K. Patralekh
Central Health Services,
Ministry of Health & Family Welfare, GOI,
New Delhi, India

M. K. Patralekh (✉)
C-1/160-161, 2nd Floor, Sector-16, Rohini,
Delhi 110089, India
e-mail: mohit_patralekh@yahoo.co.in

Fig. 1 Boy demonstrating voluntary anterior dislocation of his right shoulder

set at 20° less than that of the opposite shoulder initially [3]. The child was strictly prohibited to dislocate the shoulder voluntarily in future and to lift heavy weight(>9 kg) and overhead-activities for 1 year.

On the last visit at 52 weeks, the patient did not try to dislocate the shoulder and the range of motion was—abduction-110°, flexion-130°, extension-50°, external-rotation-70°, internal-rotation-80° (almost full-range). Overall, it was a satisfactory intermediate-term clinical result.

Voluntary dislocation of the shoulder is rare in children and mostly occurs when they reach adolescence. Portal in 1722, described the first case and others including Parona, D'Angelo, Braunstein, Martel, Papavasileiou and Kitsis contributed several cases to literature [1, 4]. Rowe et al. divided patients into two groups, those with-

- I. significant emotional problems, and using it as a psychological defense
- II. no significant psychological or social disorder.

Results of operative treatment were good in-group II. Electromyographic studies did not show any consistent abnormality. Some patients may have a history of trauma [2]. Another classification is based on direction: anterior-posterior-inferior-multidirectional.

Normally the humerus is rotated with respect to the glenoid by the coordinated action of the deltoid pulling upward and the subscapularis, infraspinatus, and teres-minor pulling inward against the glenoid and obliquely downward, both acting around an axis in the anteroposterior-plane passing through the humeral head (creating a force couple) and is initiated and sustained by the upward oblique pull of the supraspinatus. The ability to voluntarily displace the humeral-head forward, backward, or inferiorly out of the glenoid is seen when patient achieves abnormal control over some shoulder muscles and is performed by stabilizing the scapula against the thorax (by the rhomboids) and activating one-half of a force couple of the shoulder while the other half (antagonists) are inhibited [1, 2].

Other classical bony and soft-tissue procedures for recurrent shoulder dislocation have been unrewarding in such cases. Neer and Foster treated 40 involuntary and Lefort G et al. 29 voluntary shoulder instability cases by capsular shift procedures [3, 4]. This technique offers the advantage of correcting shoulder instability through one incision without any damage to the articular surface with good results.

Conflict of Interest Statement No benefits in any form have been received or will be received from a commercial party related directly or indirectly to the subject of this article. No source of support or conflict of interest to be disclosed

References

1. Papavasileiou A, Kitsis C (2003) Multidirectional voluntary glenohumeral dislocation in a 7-year-old patient: a case report. *Acta Orthopaedica Belgica* 69(6):558–561
2. Rowe CR, Pierce DS, Clark JG (1973) Voluntary dislocation of the shoulder: a preliminary report on a clinical, electromyographic, and psychiatric study of twenty-six patients. *J Bone Joint Surg Am* 55:445–460
3. Neer CS II, Foster CR (1980) Inferior capsular shift for involuntary inferior and multidirectional instability of the shoulder: a preliminary report. *J Bone Joint Surg* 62-A:897–908
4. Lefort G, Pfliger F, Mal-Lawane M, Belouadah M, Daoud S (2004) Capsular shift for voluntary dislocation of the shoulder: results in children. *Rev Chir Orthop Reparatrice Appar Mot* 90(7):607–612, French