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CASE REPORT

H.T. Dinopoulos · P.V. Giannoudis · R.M. Smith
S.J. Matthews

Bilateral anterior shoulder fracture-dislocation

A case report and a review of the literature

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Abstract We report an unusual case of bilateral anterior shoulder dislocation following trauma. Previously reported cases were either of bilateral dislocations or bilateral fracture dislocations. In our case the patient suffered bilateral anterior dislocation with a three part fracture dislocation on the right. A review of the literature is presented.

Résumé Nous rapportons un cas exceptionel de déboîtement de l'épaule anterieur bilatéral qui suit le trauma. Les cas précédemment rapportés étaient des déboîtements bilatéraux ou bien fracture déboîtements bilatéraus. Dans notre cas le malade a souffert un déboîtement anterieure bilatéral, associé avec une fracture de. Une révision de la littérature international est presentée.

Introduction

The most common bilateral dislocations are posterior, resulting from seizures or convulsions due to epilepsy, electric shock or electroconvulsive therapy; or in emotionally disturbed patients, (3, 9, 11, 13, 14, 16).

Simulataneous bilateral anterior dislocation of the shoulder occurs rarely and is usually of traumatic origin. A review of the literature reveals only 28 cases of bilateral anterior dislocation of the shoulder.

We report an unusual case of bilateral anterior shoulder dislocation following trauma.

Case report

A woman of 76 years of age tripped over the wire in her garden and fell forwards, landing on her outstretched hands. There was no history of seizures or epilepsy.

H.T. Dinopoulos · P.V. Giannoudis · R.M. Smith · S.J. Matthews (✉)
Department of Orthopaedic
and Trauma Surgery St. James' University Hospital,
Beckett Street, LS9 7TF, Leeds, UK
Tel: +44-113 2433144, e-mail:stuart.matthews1@virgin.net

Physical examination revealed obvious bilateral dislocations. There was no peripheral motor, sensory or vascular deficit.

Radiographs of the shoulders demonstrated an anterior dislocation on the left. On the right (Fig. 1) there was a three part anterior

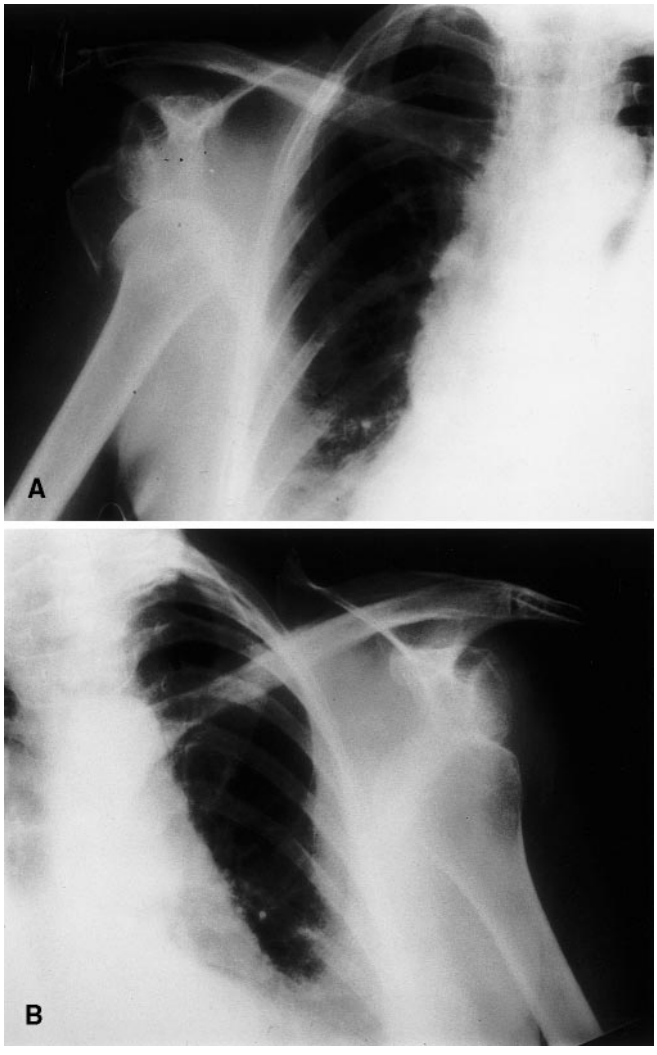

Fig. 1a Right shoulder three-part fracture-dislocation. **b** Left shoulder, anterior dislocation

Table 1 Cases reported in the international literature with bilateral anterior dislocation of the shoulders

	Author	Cases	Cause/Mechanism	Type of injury
1	Aufderheide, 1985	1	Alcohol+seizures	Simult. Ant.+Post. dislocation
2	Aufrank, 1966	1	Seizures	Bilateral fracture-dislocation
3	Brown, 1984	7	• Fall, hands in pockets • Farmer tractor accident • Fall • Buried underground • bell with hands in pockets • Fell stepping onto a bus • When unconscious transferred by the arms	➢ Bil. dislocation ➢ Bil. fracture-dislocation ➢ Bil. Dislocation ➢ Bil. fracture-dislocation (Gr. tuberosity fracture) ➢ Bil. dislocation (Gr. tuberosity fracture) ➢ Bil. dislocation (Gr. tuberosity fracture) ➢ Bil. dislocation
4	Carew-McColl, 1980	1	Electric shock	Bil. fract-dislocation (Gr. tuberosity)
5	Costigan, 1990	1	Old undiagnosed, (not epileptic or trauma)	Bil. dislocation
6	Hartney-Velazko, 1984	1	Seizures+cocaine	Bil. dislocation
7	Hoofwijk, 1984	1	Bicycle-fall-injury	Bil. erect dislocation
8	Jekic, 1973	1	Fall	Bil. dislocation
9	Lal, 1992	2	• Fall • Fall	➢ Bil. fractue dislocation ➢ Bil. dislocation
10	Markel, 1994	1	Grand mal seizures	Bil. fract-dislocation (Gr. tuberosity)
11	McFie, 1976	1	Direct forward traction by a motor-bike	Bil. subcoracoid dislocation
12	Nagi, 1990	1	Arms were firmly grasped from behind while falling	Bil. fracture-dislocation
13	Jones, 1987	1	Weight lifter (bench press)	Bil. dislocation
14	Paley, 1986	1	Fall	Bil. fract-dislocation (Gr. tuberosity)
15	Peiro, 1975	1	Cleaning cement mixing machine	Bil. erect dislocation
16	Salem, 1983	1	Electric shock	Bil. fracture-dislocation
17	Segal, 1979	2 1	• Seizures • Grand mal+alcohol • High speed water-skiing	➢ Bil. dislocation ➢ Bil. fracture-dislocation ➢ Bil. dislocation
18	Thomas, 1996	1	Undiagnosed after 8/12-Fall	Bil. fracture-dislocation (Gr. tuberosity)
19	Our case report	1	Fall	Bil. dislocation (with unilateral three part fracture-dislocation)

fracture dislocation with a greater tuberosity fracture and an impacted fracture through the surgical neck of humerus.

Closed manipulations successfully reduced both dislocations. On the right side the fracture of the surgical neck remained impacted with approximately 1 cm displacement of the greater tuberosity fracture. Although operative treatment in the form of open reduction and internal fixation was offered, the patient chose to be treated conservatively in an abduction brace.

Following immobilisation for one week for the left side and three weeks for the right side the paient was subsequently referred for physiotherapy.

After a period of twelve weeks of rehabilitation she had regained an excellent and confortable range of movement on the left and was developing useful gleno-humeral movement on the right.

Discussion

The mechanism of uni-lateral anterior dislocation of the shoulder is forced extension, abduction and external rotation of the arm causing impingement of the greater tuberosity on the acromion and thus levering the humeral head out of the glenoid. Sometimes a direct blow to the posterior aspect of the shoulder or forward traction can cause dislocation.

In falling and attempting to protect oneself, the arms are reflexly raised or abducted and this predisposes to anterior dislocation. Usually one arm reaches the ground first and sustains the injury.

Reviewing the literature were found 28 cases of bilateral anterior dislocation of the shoulder (Table 1). The most common mechanisms producing bilateral anterior

dislocation or fracture dislocation of the shoulder are sudden muscular contractures and violent bilateral traction, or bilateral deceleration forces associated with trauma. Acute muscular contractions may be produced during seizures, epilepsy or an electric shock.

The cases previously reported were either bilateral dislocations or bilateral fracture dislocations. In our case the patient suffered bilateral anterior dislocation with a three part fracture dislocation on the right side. To the best of our knowledge this combination of injuries has not previously been reported.

The greater tuberosity is displaced in the approximately 15% of all anterior dislocations [6]. When a two part fracture dislocation is associated with a greater tuberosity fracture that is displaced, the diagnosis of rotator cuff tear is almost certain, and this can cause long term instability and functional impairment if the greater tuberosity fragment is not anatomically reduced [15]. In our case, although the fracture of the greater tuberosity was treated conservatively, the patient regained satisfactory function.

References

1. Aufderheide T, Trascone R, Cicero J (1985) Simultaneous bilateral anterior and posterior shoulder dislocations. Am J Emerg Med 3:331–333
2. Aufrank O, Jones W, Turner R (1966) Bilateral shoulder fracture-dislocations. JAMA 195:162–165
3. Brown RJ (1984) Bilateral dislocation of the shoulders. Injury 15:267–276
4. Carew-McColl M (1980) Bilateral anterior shoulder dislocations caused by electric shock. Br J Clin Pract 34:251–254
5. Costigan PS, Binns MS, Wallace WA (1990) Undiagnosed bilateral anterior dislocation of the shoulder. Injury 21:409
6. Ferkel RD, Hedly AK, Eckardt JJ (1984) Anterior fracture dislocations of the shoulder. Pitfalls in treatments. J Trauma 24: 363
7. Hartney-Velazco K, Velazco A, Fleming LL (1984) Bilateral anterior dislocation of the shoulder. South Med J 77:1340–1341
8. Hoofwijk AGM, Vanderwerken CHR (1984) Simultaneous bilateral erect dislocation of the shoulder. Netherl J Surg 36-6, p 175
9. Jekic M (1973) Der seltene Fall beiderseitiger Oberarmverrenkung. Langenbecks Arch Chir 334:331
10. Jones M (1987) Bilateral shoulder dislocation. Br J Sports Med 21:139
11. Lal M, Yadav RS, Prakash V (1992) Bilateral anterior fracture-dislocation of the shoulder-two case reports. Indian J Med Sci 46:209
12. Markel DC, Blaiser RB (1994) Bilateral anterior dislocation of the shoulders with greater tuberosity fractures. Orthopedics 17:945
13. McFie J (1976) Bilateral anterior dislocation of the shoulder. Injury 8:67–69
14. Nagi ON, Dhillon MS (1990) Bilateral anterior fracture dislocation of the shoulders. J Orthop Trauma 4:93–95
15. Neer CS (1970) Displaced proximal humeral fractures. Classification and evaluation. J Bone Joint Surg [Am] 52:1077–1089
16. Paley D, Lovet R, Malcolm BW (1986) Bilateral anterior fracture-dislocation of the shoulders with brachial plexus and axillary artery injury. Orthop Rev 15:45–48
17. Peiro A, Ferandis R, Correa F (1975) Bilateral erect dislocation of the shoulders. Injury 6:294–295
18. Salem MI (1983) Bilateral anterior fracture dislocation of the shoulders, due to severe electric shock. Injury 14:361–363
19. Segal D (1979) Acute bilateral anterior dislocation of the shoulders. Clin Orthop 140:21–22
20. Thomas DP, Graham GP (1996) Missed bilateral anterior fracture-dislocations of shoulder. Injury 27:661–662