

Bilateral Anterior Shoulder Dislocation in the Elderly – A Case Report and Review of the Literature

Kristian Nikolaus Schneider¹, Benedikt Schliemann², Salomon M Manz¹,
Pranai K Buddhdev³, Georg Ahlbäumer¹

Learning Points for the Article:

During clinical examination a bilateral shoulder dislocation presents with a fallacious symmetry of the shoulder girdle: sufficient diagnostics are needed to prevent a late-diagnosis and a non-detection of concomitant pathologies.

Abstract

Introduction: Bilateral shoulder dislocations are rare and a diagnostic as well as a therapeutic challenge.

Case Report: We report the case of a 67-year-old male who fell while skiing and suffered a bilateral anterior shoulder dislocation associated with a four-part proximal humerus fracture on the left side and an osseous avulsion of the rotator cuff, a Pulley lesion, and a Hill–Sachs lesion on the right side. In addition, we searched the PubMed database using the terms “bilateral shoulder dislocation” and also “bilateral glenohumeral dislocation”. All retrieved matches were browsed for reports of bilateral anterior shoulder dislocations in patients aged 40 years or older. We identified and analyzed 35 case reports, including our own, regarding 20 male and 15 female patients with an average age of 58.9 years (female: 59.2 years, male: 58.6 years).

Conclusion: Elderly patients with a bilateral shoulder dislocation are at special risk for late diagnosis (five of 35 cases were not detected on the same day, but up to nine months later), concomitant pathologies (proximal humerus fractures were present in 19 cases; rotator cuff pathologies in seven cases), and insufficient diagnostic soft-tissue imaging (only four cases performed ultrasound/magnetic resonance imaging). Our reported case assembles a variety of possible concomitant pathologies. Through careful and comprehensive diagnostics all accompanying lesions were detected and subsequently addressed. The patient’s outcome shows that even in older patients with a combination of various bony, cartilaginous, muscular and ligamentous pathologies, good-to-excellent post-reductive and post-operative results are possible if diagnostics are comprehensive and treatment is prompt.

Keywords: Shoulder dislocation, Glenohumeral instability, Bilateral anterior shoulder dislocation, Shoulder dislocation in the elderly, Shoulder dislocation concomitant injuries, Shoulder dislocation winter sports.

Introduction

Anterior shoulder dislocation is a common injury with an incidence of 1.7% that frequently happens in contact-, overhead-, or winter sports [1]. Bilateral shoulder dislocations are by contrast rare, as the dislocating forces have to act on both shoulder joints synchronously and simultaneously [2].

We report the first case of a patient with a bilateral anterior shoulder dislocation in winter sports and its subsequent treatment. We also present a complete review of the English literature with 35 cases of bilateral anterior shoulder

dislocations in patients aged 40 years and older focusing on the incidence and diagnostics of concomitant pathologies as well as the patient’s outcome.

The patient’s age of 40 years and older was arbitrarily chosen by many authors to assess the “elder patient” in shoulder literature [3, 4, 5, 6].

Case Report

A 67-year-old sportive male (1.89 m; 95 kg) was referred to our trauma department by air ambulance after he fell while skiing crossover at a reasonable speed from deep snow back to the

Access this article online

Website:
www.jocr.co.in

DOI:
10.13107/jocr.2250-0685.890

Author’s Photo Gallery



Dr. Kristian Nikolaus
Schneider



Dr. Benedikt
Schliemann



Dr. Salomon
Manz



Dr. Pranai
Buddhdev



Dr. Georg
Ahlbäumer

¹Department of Orthopaedics and Trauma Surgery, Klinik Gut, St. Moritz, Switzerland, ²Department of Trauma, Hand- and Reconstructive Surgery, University Hospital Münster, Münster, Germany, ³Department of Orthopaedics and Trauma Surgery, King’s College Hospital London, London, United Kingdom.

Address of Correspondence

Dr. Kristian Schneider, Hammerstraße 8, 48153 Münster, Germany.
E-mail: kristian.schneider.mh@gmail.com



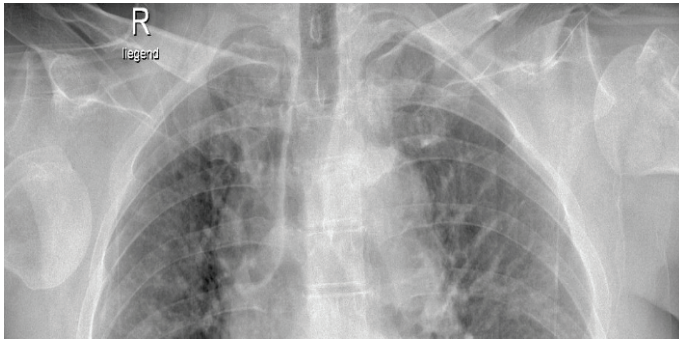


Figure 1: Bilateral anterior shoulder dislocation (anterior-posterior view).

prepared slope – overseeing a significant step down of approximately 1 m. The patient unsuccessfully tried to break his fall but hit the snow with both extended arms straight over his head upfront. The patient’s past medical history excluded epilepsy, hypoglycemia, or any other possible seizure trigger.

The patient was managed acutely on the slope and in our emergency room, according to ATLS principles, with a presenting GCS of 10 – E3V3M4. Full clinical examination was supplemented with imaging including a FAST scan and radiographs of shoulder joints, thorax, and pelvis. These confirmed the clinically suspected bilateral anterior shoulder dislocation combined with a four-part proximal humerus fracture on the left side and an osseous rotator cuff avulsion on the right side. The patient was neurovascular intact (Fig. 1, 2a and 3a).

In the emergency room, both dislocations were consecutively reduced under sedation using the traction-counteraction-technique (Fig. 2b and 3b). No neurovascular deficit was detected post reduction. The right shoulder was immobilized in a Gilchrist bandage and the left shoulder in a Desault’s bandage before performing a computed tomography (CT)-scan of the head to successfully eliminate possible cerebral hemorrhage or skull vault injuries.

2 h after the accident, surgical treatment of the left four-part

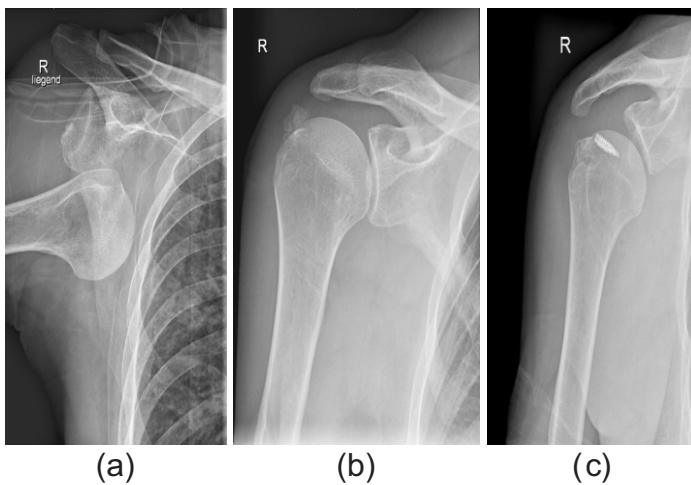


Figure 2: (a-c) Right shoulder: Dislocated (a), after reduction (b), post-operatively (c) (anterior-posterior views).

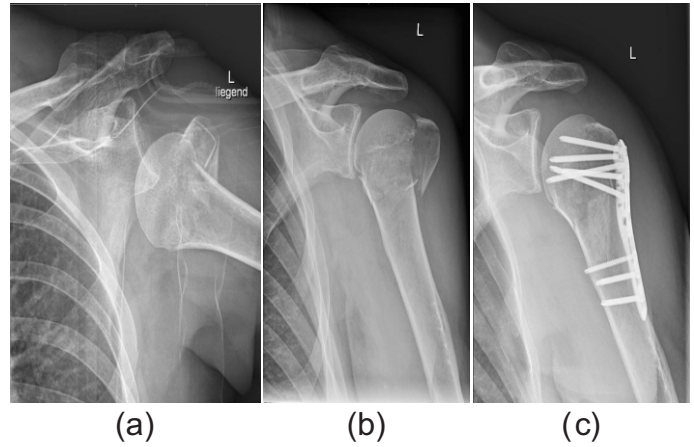


Figure 3: (a-c) Left shoulder: Dislocated (a), after reduction (b), post-operatively (c) (anterior-posterior views).

proximal humerus fracture was performed by minimally invasive plate osteosynthesis with a PHILOS® plate (Synthes; West Chester, USA). A central bone void was filled with an Allobone® allograft (Neutromedics AG; Charm, Switzerland) (Fig. 3c). An intra-operative diagnostic shoulder arthroscopy revealed no concomitant pathologies to the left shoulder joint, excluding any significant rotator-cuff injury, labral lesion, or chondral articular damage.

As the patients recovering progressed, a magnetic resonance imaging (MRI) scan of the right shoulder was performed 3-day post-injury to clarify the soft-tissue damage and subsequently a single-row rotator cuff repair using two 5.5 mm TwinFix® anchors (Smith & Nephew; London, United Kingdom) was performed. An additional Pulley-lesion was treated with a biceps tenodesis with fixation of the tendon to the intertubercular sulcus using a 5.5 mm Footprint® anchor (Smith & Nephew; London, United Kingdom). The Hill–Sachs lesion was insignificant and did not require any further treatment (Fig. 2c).

Post-operatively, the left shoulder was immobilized in a Velpheu-sling for 4 weeks and the right shoulder in an abduction splint for 6 weeks. Passive mobilization of both shoulders was started immediately on the first post-operative day, followed by increasing active and assistive mobilization. On the right shoulder, progressive adduction and a steady build-up of strength were initiated after 6 weeks. On the left shoulder, full mobilization was allowed following clinical and radiological confirmation of fracture consolidation.

Physiotherapy (3 times a week), aquatic therapy (2 times a week), and a 3-week stay in a rehabilitation facility 2-month post-injury completed the post-operative care.

The patient was discharged in good general condition with a total inpatient stay of 11 days. The 30-day follow-up assessment showed a still restricted range of movement while the 6-month follow-up assessment demonstrated bilateral considerably improved range of movement (Table 1). At the 2-year follow-

up assessment still no evidence of implant failure, recurrence of dislocation or instability was observed.

Materials and Methods

A comprehensive review of the English literature on bilateral anterior shoulder dislocations in patients aged 40 years or older was conducted. The PubMed database was searched using the terms “bilateral shoulder dislocation” and “bilateral glenohumeral dislocation.” All retrieved matches were browsed for reports of bilateral anterior shoulder dislocations in patients aged 40 years or older.

Results

Including this case (see “case report” above), we identified and analyzed 35 case reports regarding 20 male and 15 female patients with an average age of 58.9 years (female: 59.2 years, male: 58.6 years) (Tables 2 and 3).

Diagnostics

Thirty reported cases were traumatic, four cases atraumatic, and the reason for injury in one case remains unclear. Out of the 30 traumatic cases, 19 were due to a fall in everyday life, four cases due to an accident, four cases involved electric shocks and two patients due to assault. The four reported atraumatic cases were in two cases due to chronic arthritis ($\times 1$ septic arthritis, $\times 1$ rheumatoid arthritis) and in addition two cases due to a seizure without any related fall or blunt.

Imaging

In all 35 cases, an X-ray examination was used to assess the shoulder joint pre- and post-reduction. A CT-scan for further fracture evaluation was performed in three cases. An MRI scan was performed in three and ultrasound imaging in one case. An EMG was also conducted in three reported cases.

Concomitant injuries

A total of 19 patients suffered a concomitant fracture of the proximal humerus ($\times 8$ bilateral, $\times 11$ unilateral) ranging from a simple fracture of the greater tuberosity to a four-part humeral head fracture. Concomitant soft-tissue damage was discovered in nine patients with seven reported cases of rotator cuff tears ($\times 2$ bilateral, $\times 5$ unilateral), two Hill–Sachs lesions, two Pulley-lesions, and six reported cases of injured nerves.

Reduction-technique

In 26 cases a closed reduction was performed ($\times 13$ Kocher technique, $\times 2$ traction-counteraction technique, $\times 1$ Hippocrates technique, $\times 1$ Cooper technique, $\times 1$ Spaso technique, and $\times 8$ not specified), in four cases open reduction was performed, in two cases a bilateral closed reduction failed unilaterally and was subsequently performed in an open approach. In another two cases, no reduction was performed as the situations were chronic and an initial reduction unpromising [7, 8].

Post-reductive immobilization

In total, 24 of 35 reports (69%) documented the post-reductive

immobilization instructions of both upper extremities. The different immobilization schemes varied greatly in type and duration: 22 cases (92%) report a type of sling immobilization – ranging from a Velpeau - sling and the similar “broad arm sling” to an abduction sling. In two cases (8%), body strapping was used to immobilize both shoulder joints. The duration of immobilization ranged from as short as 2 days to 6 weeks.

Discussion

Unilateral anterior shoulder dislocation is the most frequent joint dislocation in the human body [9]. The dislocation requires a set mechanism of injury: Forced extension, abduction, and external rotation leading the humeral head to dislocate into anterior direction [9, 10]. The dislocation is common in contact-, overhead-, and winter sports when a skier or snowboarder tries to prevent a fall.

Bilateral shoulder dislocations are by contrast rare and – in sharp contrast to unilateral shoulder dislocations – not mainly due to a sports trauma but often described as the result of a seizure or electric shock, when the stronger internal rotator muscles outmatch the weaker external rotators in contraction resulting in a strong adduction and internal rotation forcing the humeral head to dislocate posteriorly [11, 12, 13, 14].

Even less frequent than bilateral posterior shoulder dislocations are bilateral anterior shoulder dislocations – < 80 cases of this lesion have been reported in English literature. Although winter sports account for a majority of unilateral shoulder dislocations, there has been no case in the literature reporting on a bilateral anterior shoulder dislocation [15].

Diagnostics

The rarity of this lesion and the fallacious symmetry of the shoulder girdle during the clinical examination – as opposed to the typical asymmetry in the frequent unilateral dislocation – exacerbate the diagnosis of a bilateral shoulder dislocation. Dunlop reported that more than 10% of all bilateral shoulder dislocations are not diagnosed immediately.

In our review, the patient did not always remember the date of injury, so that only in 33 of 35 reports the interval between injury and diagnosis could be defined. Although in 28 of these 33 cases (85%) the diagnosis was made on the same day, four cases (12%) remained undetected for up to 6 weeks. One case was not diagnosed for over 9 months [13, 16].

Due to the frequent cause of seizure as a trigger of bilateral shoulder dislocations, a careful anamnesis for any history of epilepsy or hypoglycemia should always be conducted and was performed in 17 of 35 cases (49%) [11, 17].

Concomitant Injuries

Patients with a shoulder dislocation are at special risk for concomitant pathologies. While damage to the labrum is more prominent in younger patients, fractures, and especially rotator cuff tears become more frequent in elder patients [18, 19, 20].

Table 1: Post-operative range of movement

| Follow-up | Left shoulder | | Right shoulder | |
|----------------------------|---------------|----------|----------------|----------|
| | 30-days | 6-months | 30-days | 6-months |
| Extension/flexion | 55–0–150 | 60–0–160 | 30–0–50 | 50–0–75 |
| Internal/external rotation | 90–0–50 | 90–0–70 | 90–0–5 | 90–0–45 |
| Abduction/Adduction | 160–0–30 | 180–0–30 | 40–0–20 | 110–0–20 |

Nineteen of our 35 reviewed bilateral shoulder dislocations (54%) were accompanied by a unilateral (×11) or bilateral (×8) proximal humerus fracture – ranging from a simple fracture of the greater tuberosity to a four-part humeral head fracture.

Simank et al. have shown that with increasing patient’s age, the incidence of concomitant rotator cuff tears increases, too and is omnipresent in patients aged 70 years or older. In addition, Pevny et al. report the significant negative impact of concomitant rotator cuff tears – present in 35% of their patients

– on the outcome of their reviewed patients aged 40 years or older [4].

In our review, rotator cuff pathologies were only detected in seven cases (20%) – five unilaterally and two bilaterally. Taking into account that one case of bilateral shoulder dislocation consists of two affected shoulders, there are only nine diagnosed rotator cuff tears (13%) in a total of 70 individual dislocated shoulder joints.

Despite this high risk, the relevant diagnostic imaging such as ultrasound or MRI was only performed in four cases (11%) – including our own case. Therefore, a high number of undetected rotator cuff lesions must be assumed due to insufficient diagnostic measures. To detect concomitant injuries, we suggest performing an ultrasound or MRI scan in all elderly patients presenting with an anterior shoulder

Table 2: Review – Basic information, cause and mechanism of injury, performed imaging and reduction technique

| Years | Authors | Sex | Age | Injury | Cause of injury | Mechanism of injury | Days between injury and diagnosis | Diagnostic imaging | Reduction technique |
|-------|-----------------------------|--------|-----|-----------|----------------------|---|-----------------------------------|--------------------|--|
| 1957 | Brown [11] | Male | 54 | Traumatic | Fall – daily life | Falling with hands in pockets | 0 | X-ray | Closed |
| 1957 | Brown [11] | Female | 71 | Traumatic | Fall – daily life | Falling while stepping onto a bus | 0 | X-ray | Closed |
| 1960 | Brown [11] | Male | 49 | Traumatic | Accident | Buried with soil | 0 | X-ray | Right: Closed; left: closed failed, open |
| 1966 | Brown [11] | Male | 65 | Traumatic | Fall – daily life | Falling with outstretched arms | 0 | X-ray | Closed |
| 1977 | Yadav [8] | Male | 56 | Traumatic | Seizure | Convulsions and unconsciousness after seeing the dead body of a close relative | 42 | X-ray | Not performed |
| 1978 | Segal et al. [26] | Male | 60 | Traumatic | Seizure | Alcohol-withdrawal | 0 | X-ray | Closed - Kocher |
| 1981 | Brown [11] | Male | 60 | Traumatic | Fall – daily life | Falling forward with hands in pockets | 0 | X-ray | Closed |
| 1981 | Gompels and Darlington [27] | Female | 45 | Traumatic | Septic arthritis | Large joint effusions containing calcified debris | 7 | X-ray, ultrasound | Open |
| 1989 | Mehta and Kottamasu [28] | Male | 53 | Traumatic | Fall – daily life | Falling 20ft landing on chest and arms flexed at the elbows | 0 | X-ray, MRI, EMG | Closed - elevation-flexion technique by cooper |
| 1990 | Costigan et al. [29] | Female | 74 | Traumatic | unknown | - | unknown | X-ray | - |
| 1990 | Nagi and Dhillon [30] | Male | 49 | Traumatic | Fall – daily life | Falling while arms were firmly grasped from behind | 0 | X-ray, CT | Right: Closed failed, open; left: open |
| 1991 | Velkes et al. [31] | Female | 70 | Traumatic | Fall – daily life | Falling backward landing on both outstretched arms behind the body | 0 | X-ray | Closed |
| 1996 | Thomas and Graham [16] | Female | 65 | Traumatic | Fall – daily life | Falling out of a bus with outstretched arms | 289 | X-ray | Open |
| 1998 | Dinopoulos et al. [9] | Female | 76 | Traumatic | Fall – daily life | Falling with outstretched arms | 0 | X-ray | Closed |
| 1999 | Mihai and Dixon [7] | Female | 69 | Traumatic | Rheumatoid arthritis | Bilateral destructive changes of the anterior half of the glenoid | unknown | X-ray | Not performed |
| 2000 | Ng et al. [32] | Female | 70 | Traumatic | Fall – daily life | Tripping over a wire while making the bed | 0 | X-ray | Closed |
| 2000 | Yuen and Tung [12] | Male | 41 | Traumatic | Electric shock | Holding a steel bar over his head with both hands when he felt an electric current passing his body | 0 | X-ray | Closed - Spaso-technique |
| 2002 | Dunlop [13] | Female | 91 | Traumatic | Fall – daily life | Falling and grabbing a handrail | 0 | X-ray | Closed - Kocher |

Table continued on next page...



| Years | Authors | Sex | Age | Injury | Cause of injury | Mechanism of injury | Days between injury and diagnosis | Diagnostic imaging | Reduction technique |
|-------|-------------------------|--------|-----|-----------|-------------------|--|-----------------------------------|--------------------|---|
| 2005 | Devalia and Peter [33] | Male | 43 | Traumatic | Fall - | Falling 10ft off a ladder with abducted shoulders and hyperextended arms at the elbows landing on outstretched hands | 0 | X-ray | Closed - Kocher |
| 2005 | Sharma et al. [34] | Male | 42 | Traumatic | Accident | Leaning forward holding an overhead bar, a heavy object fell | 14 | X-ray, CT | Open |
| 2006 | Ngim et al. [35] | Female | 65 | Traumatic | Domestic assault | - | 0 | X-ray | Closed - Kocher |
| 2007 | Turhan and Demirel [36] | Male | 46 | Traumatic | Fall – sports | Avoiding falling back from the saddle, the rider pulled the halter but fell down | 0 | X-ray | Closed - Kocher |
| 2008 | Siwach et al. [37] | Male | 45 | Traumatic | Accident | Backward pull by a buffalo, hyperextension in adduction and internal rotation | 0 | X-ray | Closed - Kocher |
| 2009 | Felderman et al. [38] | Female | 44 | Traumatic | Accident | Doing chin-up exercises with palms facing toward her | 0 | X-ray | Closed - traction-countertraction technique |
| 2009 | Kalkan et al. [39] | Female | 64 | Traumatic | Fall – daily life | Grabbing a bar while falling hanging on curtains | 0 | X-ray, EMG | Closed - Kocher |
| 2009 | Kalkan et al. [39] | Female | 65 | Traumatic | Fall – daily life | Losing balance while hanging on curtains over the windows | 0 | X-ray | Closed - Kocher |
| 2012 | Bachhal et al. [40] | Male | 60 | Traumatic | Electric shock | Holding onto metallic rails when a short circuit occurred | 0 | X-ray, CT | Open |
| 2012 | Moloto et al. [41] | Male | 50 | Traumatic | Electric shock | Electrocuted while welding a gate. | 0 | X-ray | Closed - Hippocrates |
| 2012 | Suryavanshi et al. [42] | Male | 45 | Traumatic | Seizure | Falling forward with both arms abducted and externally rotated | 0 | X-ray | Closed - Kocher |
| 2013 | Ballesteros et al. [43] | Female | 74 | Traumatic | Fall – daily life | Falling forward with arms extended | 0 | X-ray | Closed - Kocher |
| 2013 | Nourredine et al. [44] | Male | 70 | Traumatic | Fall – daily life | Falling with outstretched arms and extended wrists and elbows while descending his home stairs | 0 | X-ray | Closed - Kocher |
| 2013 | Zümürüt et al. [45] | Male | 50 | Traumatic | Electric shock | Repairing an electrical defect at home a short circuit occurred | 0 | X-ray | Closed - Kocher |
| 2014 | Choulapalle et al. [46] | Male | 40 | Traumatic | Quarrel | Both hands were held and pulled by two people on either side | 42 | X-ray, CT | Open |
| 2014 | Siu and Lui [47] | Female | 75 | Traumatic | Fall -sports | Hitting a bench with both shoulders in extension, abduction and external rotation | 0 | X-ray, MRI, EMG | Closed - Kocher |
| 2017 | Schneider et al. | Male | 67 | Traumatic | Fall - sports | Falling with outstretched elevated arms in internal rotation | 0 | X-ray, MRI, CT | Closed - traction-countertraction technique |

dislocation.

Treatment

The pre-reduction radiograph is necessary to assess the humeral

head and to detect possible fractures that could be worsened through an impetuous try of reduction while the post-reductive X-ray confirms a successful reposition and allows the second



elimination of possible fractures. Furthermore, Kahn and Mehta and Kottamasu have shown that 37.5% of all concomitant fractures in shoulder dislocations were only seen on a post-reductive X-ray [20,21].

Numerous techniques of closed reduction have been described in the literature, but no universal approach has been found yet. The Kocher technique and variations of the traction-counteraction technique of Hippocrates remain the most popular performed with the Kocher technique being applied in every second case (×13) of initial closed reductions (×26) in our review. However, Dala-Ali et al. highlighted the various complications of the traditional reduction techniques and recommend modern alternatives such as the FARES technique [5, 22]. In two reported cases, the initial closed reduction failed and was subsequently performed open, and in another two cases, an initial and successful open reduction was performed.

An immediate but careful reduction is vital to prevent damage to the brachial plexus and rotator cuff muscles as delayed repositions are associated with permanent nerve damage, reduced mobility, and a higher risk for re-dislocation [16].

Immobilization

Following a successful reduction, immobilization with regard to concomitant injuries and the patient's compliance is necessary. About 92% of all reviewed cases use a form of sling immobilization that is especially challenging when done bilaterally in internal rotation.

A seldom but possible danger of a sling immobilization in the elder population are skin pressure ulcer in the head and neck area. A careful physical examination during follow-up visits is vital to prevent this deuteropathy [23].

Outcome

Eleven reviewed cases (31%) report a full recovery bilaterally, whereas twelve cases (34%) report a restricted range of movement bilaterally. Three cases (9%) report both: A restriction in one shoulder and a full recovery in the other. Five reports (14%) remain vague on the patient's outcome as statements like "reasonable resumption of painless arm movement" or "adequate recovery" let suspect a neither quantified nor published restricted range of movement. No follow-up results were published in four case reports (11%).

Out of the fifteen cases with post-reductive restricted range of movement only two cases (13%) have used ultrasound or an MRI scan to assess the rotator cuff. In the remaining 13 reports (87%), the further diagnostic was not considered necessary.

Hawkins et al. strengthen the influence of previously undetected rotator cuff tears in patients with an unsatisfying outcome. They have re-evaluated 14 patients with persistent "pain, weakness and functional problems despite an aggressive physiotherapy program" following a shoulder dislocation and discovered in all cases a previously unknown rotator cuff tear

[5]. Sonnabend et al. further support this finding in a re-assessment of 13 patients aged 40 years or older who "continued to experience pain and varying degrees of associated weakness" after a primary anterior shoulder dislocation. The authors found "evidence of full-thickness cuff disruption" in all 13 patients – surgical repair was performed in five patients who became subsequently "virtually pain-free" [6]. This emphasizes the need for additional diagnostic imaging such as ultrasound or MRI scans.

Conclusion

Bilateral anterior shoulder dislocations in patients aged 40 years or older are frequently accompanied by proximal humeral head fractures or soft-tissue injuries, especially rotator cuff tears. While the first-mentioned fractures are detectable on the pre- or post-reductive X-ray, the latter-mentioned soft-tissue pathologies are often overseen as required clinical test and imaging are not performed. However, these concomitant injuries – especially the rotator cuff tears – have a significant influence on the outcome [5, 6, 18, 19, 24, 25].

We have shown that soft-tissue imaging was only performed in a total of five of all 35 reviewed cases (14%) and only in two of 15 (13%) cases where a bilateral or unilateral restricted range of movement was present. Even in cases with a significant post-reductive restricted range of movement in rotation and abduction was present, no further diagnostics were conducted and the patient's poor outcome accepted.

Furthermore, we have shown that the previously reported high rate of late diagnosis in bilateral shoulder dislocations is even higher in elder patients suffering from this lesion (15%).

Our reported case of bilateral anterior shoulder dislocation assembles a variety of possible concomitant pathologies. Through careful and comprehensive diagnostics all accompanying lesions were detected and subsequently addressed within 5-day post-injury. The patient's outcome shows that even in older patients with a combination of various bony, cartilaginous, muscular and ligamentous pathologies, good-to-excellent post-reductive and post-operative results are possible if diagnostics are comprehensive and treatment is prompt. In addition, we report the first bilateral shoulder dislocation in winter sports, despite winter sports accounting for a majority of unilateral shoulder dislocations.

Clinical Message

Comprehensive anamnesis - excluding seizure as a possible trigger – and diagnostics – including soft tissue imaging – are necessary in patients with bilateral anterior shoulder dislocation aged 40 years or older not only to prevent a late diagnosis but also a non-detection of concomitant pathologies that can negatively affect the patient's outcome. Particularly in cases with post-reductive restricted range of movement, the rotator cuff integrity has to be evaluated.

References

1. Hovelius L. Incidence of shoulder dislocation in Sweden. *Clin Orthop Relat Res* 1982;166:127-31.
2. Tripathy SK, Sen RK, Aggarwal S, Dhatt SS, Tahasildar N. Simultaneous bilateral anterior shoulder dislocation: Report of two cases and review of the literature. *Chin J Traumatol* 2011;14:312-5.
3. Paxton ES, Dodson CC, Lazarus MD. Shoulder instability in older patients. *Orthop Clin North Am* 2014;45:377-85.
4. Pevny T, Hunter RE, Freeman JR. Primary traumatic anterior shoulder dislocation in patients 40 years of age and older. *Arthroscopy* 1998;14:289-94.
5. Hawkins RJ, Bell RH, Hawkins RH, Koppert GJ. Anterior dislocation of the shoulder in the older patient. *Clin Orthop Relat Res* 1986;206:192-5.
6. Sonnabend DH. Treatment of primary anterior shoulder dislocation in patients older than 40 years of age. Conservative versus operative. *Clin Orthop Relat Res* 1994;304:74-7.
7. Mihai R, Dixon JH. Bilateral atraumatic dislocation of the shoulder. *J Accid Emerg Med* 1999;16:460.
8. Yadav SS. Bilateral simultaneous fracture-dislocation of the shoulder due to muscular violence. *J Postgrad Med* 1977;23:137-9.
9. Dlimi F, Rhanim A, Lahlou A, Kharmaz M, Ouadghiri M, El-Bardouni A, et al. Bilateral anterior dislocation of the shoulders at the start of a backstroke competition. *J Orthop Traumatol* 2012;13:47-9.
10. Dinopoulos HT, Giannoudis PV, Smith RM, Matthews SJ. Bilateral anterior shoulder fracture-dislocation. A case report and a review of the literature. *Int Orthop* 1999;23:128-30.
11. Brown RJ. Bilateral dislocation of the shoulders. *Injury* 1984;15:267-73.
12. Yuen MC, Tung WK. The use of the spaso technique in a patient with bilateral dislocations of shoulder. *Am J Emerg Med* 2001;19:64-6.
13. Dunlop CC. Bilateral anterior shoulder dislocation--a case report and review of the literature. *Acta Orthop Belg* 2002;68:168-70.
14. Meena S, Saini P, Singh V, Kumar R, Trikha V. Bilateral anterior shoulder dislocation. *J Nat Sci Biol Med* 2013;4:499-501.
15. Ogawa H, Sumi H, Sumi Y, Shimizu K. Glenohumeral dislocations in snowboarding and skiing. *Injury* 2011;42:1241-7.
16. Thomas DP, Graham GP. Missed bilateral anterior fracture dislocations of the shoulder. *Injury* 1996;27:661-2.
17. Mathis RD. Bilateral shoulder dislocation: An unusual occurrence. *J Emerg Med* 1990;8:41-3.
18. Simank HG, Dauer G, Schneider S, Loew M. Incidence of rotator cuff tears in shoulder dislocations and results of therapy in older patients. *Arch Orthop Trauma Surg* 2006;126:235-40.
19. Breitenseher MJ, Pones M, Breitenseher JB. Systematics of injuries of the rotator cuff and biceps tendon. *Radiologe* 2015;55:221-30.
20. Ferkel RD, Hedley AK, Eckardt JJ. Anterior fracture-dislocations of the shoulder: Pitfalls in treatment. *J Trauma* 1984;24:363-7.
21. Kahn JH, Mehta SD. The role of post-reduction radiographs after shoulder dislocation. *J Emerg Med* 2007;33:169-73.
22. Dala-Ali B, Penna M, McConnell J, Vanhegan I, Cobiella C. Management of acute anterior shoulder dislocation. *Br J Sports Med* 2014;48:1209-15.
23. Radha S, Vaghela KR, Konan S, Radford W. Polysling skin pressure necrosis--a complication of shoulder immobilisation. *BMJ Case Rep* 2012;2012. pii: bcr2012006671.
24. Teunis T, Lubberts B, Reilly BT, Ring D. A systematic review and pooled analysis of the prevalence of rotator cuff disease with increasing age. *J Shoulder Elbow Surg* 2014;23:1913-21.
25. Maman E, Dolkart O, Chechik O, Amar E, Rak O, Rath E, et al. Arthroscopic findings of coexisting lesions with greater tuberosity fractures. *Orthopedics* 2014;37:e272-7.
26. Segal D, Yablon IG, Lynch JJ, Jones RP. Acute bilateral anterior dislocation of the shoulders. *Clin Orthop Relat Res* 1979;140:21-2.
27. Gompels BM, Darlington LG. Septic arthritis in rheumatoid disease causing bilateral shoulder dislocation: Diagnosis and treatment assisted by grey scale ultrasonography. *Ann Rheum Dis* 1981;40:609-11.
28. Mehta MP, Kottamasu SR. Anterior dislocation of the shoulders with bilateral brachial plexus injury. *Ann Emerg Med* 1989;18:589-91.
29. Costigan PS, Binns MS, Wallace WA. Undiagnosed bilateral anterior dislocation of the shoulder. *Injury* 1990;21:409.
30. Nagi ON, Dhillon MS. Bilateral anterior fracture dislocation of the shoulders. *J Orthop Trauma* 1990;4:93-5.

31. Velkes S, Lokiec F, Ganel A. Traumatic bilateral anterior dislocation of the shoulders. A case report in a geriatric patient. *Arch Orthop Trauma Surg* 1991;110:210-1.
32. Ng AB, Rix TE, Roy BR. Acute bilateral anterior dislocations of the shoulders. *Ulster Med J* 2000;69:171-2.
33. Devalia KL, Peter VK. Bilateral post traumatic anterior shoulder dislocation. *J Postgrad Med* 2005;51:72-3.
34. Sharma L, Pankaj A, Kumar V, Malhotra R, Bhan S. Bilateral anterior dislocation of the shoulders with proximal humeral fractures: A case report. *J Orthop Surg (Hong Kong)* 2005;13:303-6.
35. Ngim NE, Udorroh EG, Udosen AM. Acute bilateral anterior shoulder dislocation following domestic assault--case report. *West Afr J Med* 2006;25:256-7.
36. Turhan E, Demirel M. Bilateral anterior glenohumeral dislocation in a horse rider: A case report and a review of the literature. *Arch Orthop Trauma Surg* 2008;128:79-82.
37. Siwach R, Singh R, Rohilla R, Sangwan SS. Bilateral anterior dislocation of the shoulder. A case report and review of the literature. *Injury Extra* 2008;39:394-7.
38. Felderman H, Shih R, Maroun V. Chin-up-induced bilateral anterior shoulder dislocation: A case report. *J Emerg Med* 2009;37:400-2.
39. Kalkan T, Demirkale I, Ocguder A, Unlu S, Bozkurt M. Bilateral anterior shoulder dislocation in two cases due to housework accidents. *Acta Orthop Traumatol Turc* 2009;43:260-3.
40. Bachhal V, Goni V, Taneja A, Shashidhar BK, Bali K. Bilateral four-part anterior fracture dislocation of the shoulder--a case report and review of literature. *Bull NYU Hosp Jt Dis* 2012;70:268-72.
41. Moloto M, Mungulu B, Golele S. Bilateral anterior glenohumeral fracture dislocation. *SA Orthop J* 2012;11:88-92.
42. Suryavanshib A, Mittal A, Dongre S, Kashyap N. Bilateral anterior shoulder dislocation with symmetrical greater tuberosity fracture following seizure. *J Orthop Case Rep* 2012;2:28-31.
43. Ballesteros R, Benavente P, Bonsfills N, Chacon M, Garcia-Lazaro FJ. Bilateral anterior dislocation of the shoulder: Review of seventy cases and proposal of a new etiological-mechanical classification. *J Emerg Med* 2013;44:269-79.
44. Nourredine H, El-Sayad M, Gull S, Davies AP. Bilateral anterior shoulder dislocation. *BMJ Case Rep* 2013;2013.pii:bcr2012008308.
45. Zümürüt M, Marçil E. Bilateral shoulder injury caused by electric shock. *JAEMCR* 2013; 4:92-4.
46. Choulapalle R, Kolluri RK, Anne SR, Perumal SR, Avadhanam PK, Bheemanathuni R. A case of neglected bilateral anterior shoulder dislocation: A rare entity with unusual mechanism of injury. *Case Rep Orthop* 2015;2015:461910.
47. Siu YC, Lui TH. Bilateral anterior shoulder dislocation. *Arch Trauma Res* 2014;3:e18178.

Conflict of Interest: Nil
Source of Support: None

How to Cite this Article

Schneider KN, Schliemann B, Manz SM, Buddhdev PK, Ahlbäumer G. Bilateral Anterior Shoulder Dislocation in the Elderly – A Case Report and Review of the Literature. *Journal of Orthopaedic Case Reports* 2017 Sep-Oct;7(5):42-49

