

Non-operative treatment of neglected bilateral posterior four-part fracture- dislocation of the shoulders-a case report

AO Ifesanya, OJ Ogundele and AA Anejukwo

Department of Orthopaedics and Trauma,

University College Hospital, Ibadan, Nigeria

Abstract

Background: Bilateral posterior dislocation of the shoulders is rare and may result from a seizure. A 48 year-old HIV-positive man who presented eight weeks after bilateral posterior shoulder dislocation and bilateral fractures of the surgical necks of both humeri is reviewed. He was treated with an analgesics and physiotherapy and was able to return to work after 9 months.

Conclusion: The rarity of this lesion, its late presentation, the importance of a high index of suspicion in making the diagnosis and the fair outcome of non-operative treatment informed this report.

Keywords: *Posterior glenohumeral dislocation, Bilateral dislocation, Shoulder fracture- dislocation*

Résumé

Contexte: La dislocation postérieure bilatérale des épaules est rare et peut en résulter d'une saisie. Un homme séropositif âgé de 48 ans qui a présenté huit semaines après dislocation postérieure bilatérale de l'épaule et fractures bilatérales des cols chirurgicales des deux humérus est examiné. Il a été traité avec des analgésiques et la physiothérapie et a été en mesure de retourner au travail après 9 mois.

Conclusion: La rareté de cette lésion, sa présentation tardive, l'importance d'un indice de suspicion élevé pour faire le diagnostic et le résultat équitable de traitement non-opératoire ont informé ce rapport présent.

Mots-clés: *Dislocation scapulo-humérale postérieure, dislocation bilatérale, fracture - dislocation de l'épaule.*

Introduction

We report an unusual case of bilateral posterior dislocation of the glenohumeral joint associated with fractures of the surgical necks of both humeri sustained following a bout of seizures and presenting two months after.

The issues highlighted are four-fold: diagnostic delay, bilaterality of the dislocation associated surgical neck fractures, the association of seizure disorders with human immuno deficiency virus (HIV) infection and the fair functional outcome of non-operative treatment.

We present this case firstly as a reminder to readers of the rare possibility of bilateral shoulder fracture-dislocations occurring after a seizure, and secondly to illustrate the importance of the time-tested principle of looking for bilateral dislocations as the best way of finding them as advocated by Ngetal [1].

Case Report

A 48 year old, right-handed male long-distance driver, retroviral positive with no previous history of upper limb injury presented to the Orthopaedic Out-patients' clinic of our hospital. He had been referred from the antiretroviral clinic of the same hospital where he had just reported with 8 weeks history of bilateral shoulder pains and limitation of movement.

Symptoms started after an episode of tonic-clonic seizures lasting about 20 minutes during his sleep 8 weeks prior to presentation. There was no history of a fall. He was restrained by two grown up men who pressed his shoulders down to the bed while the seizures lasted.

There after, he noticed swellings in both shoulders with inability to move them. The swellings gradually subsided and the pain reduced over time. He had commenced shoulder exercises on his own at home before presenting to the hospital when there was no improvement. There was an index seizure 4 months earlier following which medical evaluation led to the diagnosis of HIV infection. A diagnosis of cerebral HIV infection was made at that time and he was started on antiretroviral therapy but had not been compliant with medications.

Examination revealed bilaterally symmetrical shoulders with prominence of the acromial processes and dimples inferior to them. Posteriorly, there were rounded bony swellings below the acromial processes representing the dislocated humeral heads (Figures 1a-d). All shoulder movements were limited bilaterally viz: passive abduction up to 60° (active up to 45°), internal rotation

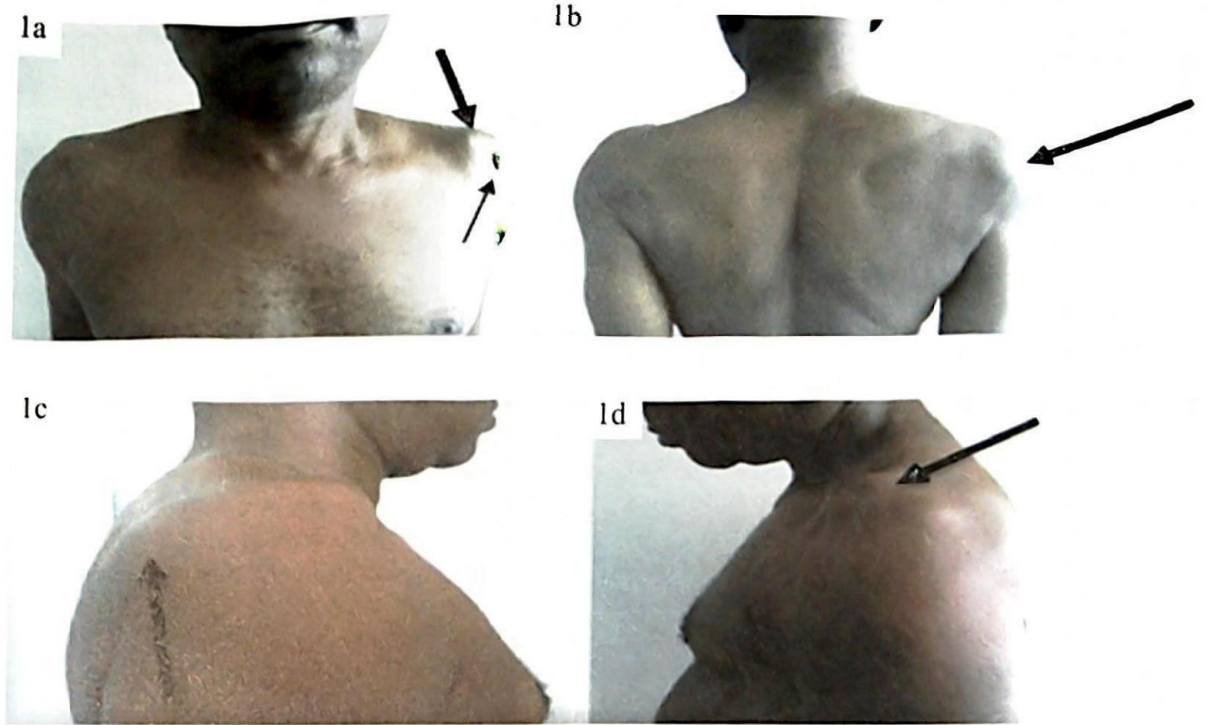


Fig. 1a-d: Clinical photographs of the patient showing prominence of the acromial processes (thick arrow in figure 1a and 1d) and dimples below them (thin arrow in figure 1a). Posterior (1b) and lateral (1c & 1d) views showing rounded prominences representing the dislocated humeral heads (thick arrows in figures 1b and 1c).

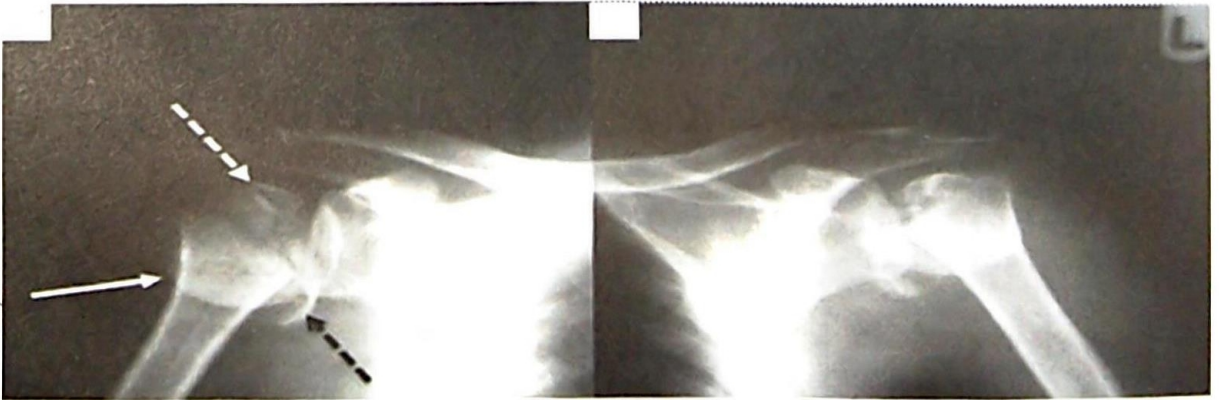


Fig. 2a and 2b: Radiographs of the shoulders showing posterior dislocations associated with four-part surgical neck fractures of the humeri bilaterally. The three small parts are labelled in figure 2a: dislocated humeral head lying posteriorly (continuous white arrow), the greater trochanter (dashed white arrow), the lesser trochanter (dashed black arrow) together with the major fragment (rest of the humerus) constitute the "4-part fracture" of the surgical neck

0°-10°, external rotation 0°-5° (active internal and external rotation was negligible), flexion 0°-20° (active was 0°-5°), extension 0°-10° (active was negligible), while adduction was negligible bilaterally. Power ranged between 2-3/5 in the shoulder muscle groups. There was no neurological deficit. Plain radiography revealed posterior dislocation of the glenohumeral joints associated

with four-part surgical neck fractures of the humeri bilaterally (Figures 2a and b).

The patient was scheduled for bilateral shoulder hemiarthroplasty which he could not afford due to financial constraints. He was therefore referred for physiotherapy while non-steroidal anti-inflammatory drugs were prescribed for pain relief.

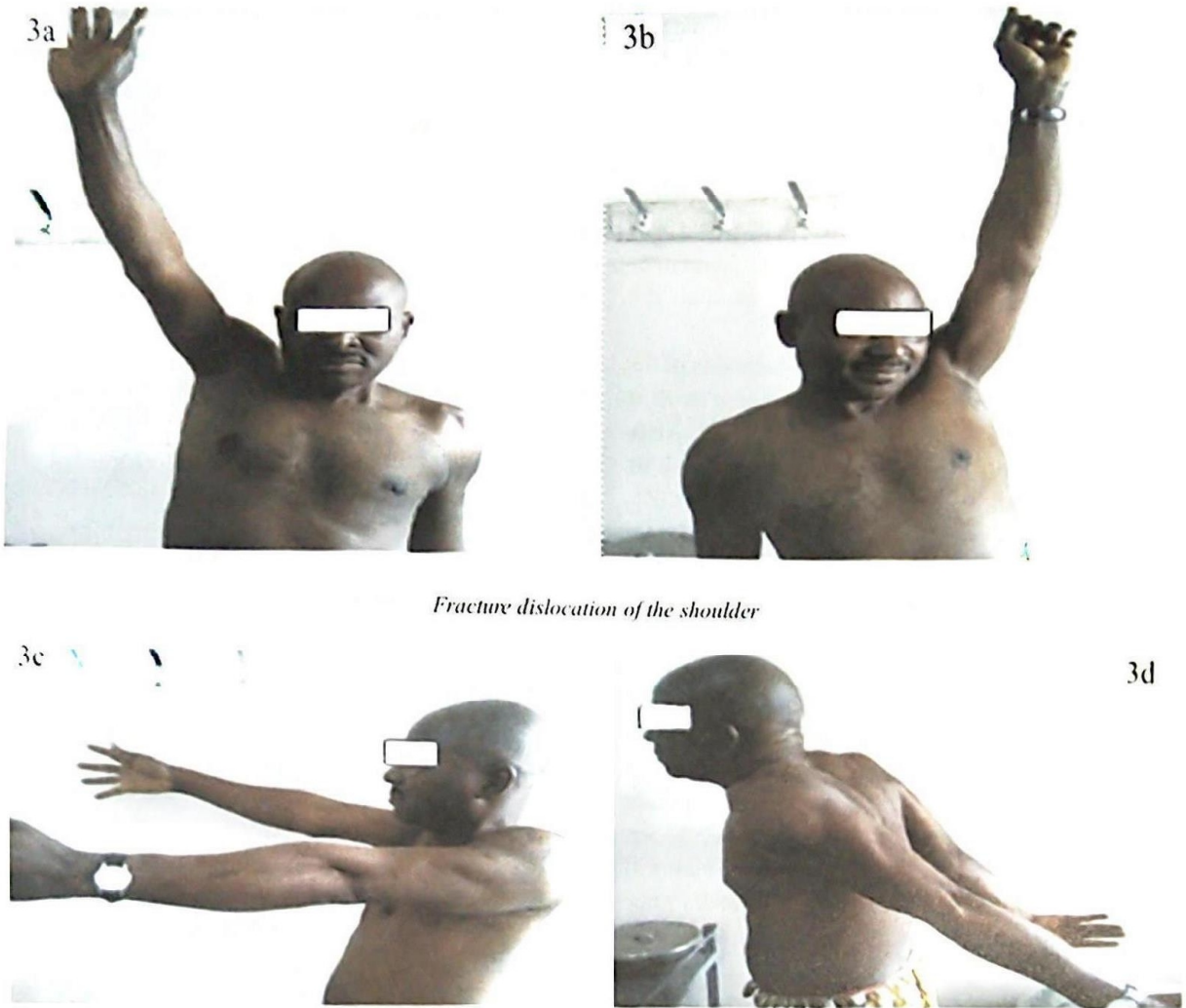


Fig. 3a-d: Clinical photographs of the patient showing the range of active movements of the shoulders (abduction- 3a & 3b, flexion – 3c and extension –3d). Note the prominence of the acromial processes and the dimpling.

He was also recommenced on antiretroviral therapy and anticonvulsant medication.

He improved significantly in terms of pain relief and range of movement of both shoulders. He was able to return to work nine months after the injury. Clinical examination 15 months post injury confirmed improvement in the range of movement of the shoulders: active abduction up to 170° , internal rotation (0° - 30°), external rotation (0° - 10°), flexion (0° - 80°), extension (0° - 40°), and adduction (0° - 10°) bilaterally; passive ranges of movement were 0° - 180° , 0° - 40° , 0° - 20° , 0° - 90° , 0° - 45° , and 0° - 20° respectively. Power had improved to 3-4/5 in the abductors, flexors and extensors at the shoulder (Figures 3 a-d).

Discussion

New onset seizures are a common manifestation of central nervous system (CNS) disorders in patients with HIV infection especially in the advanced stages

of the disease [2]. These seizures are almost always generalized tonic-clonic type. Gasper and Alvarez have identified immune suppression, the clinical stage of the retroviral infection, and CNS HIV-related opportunistic diseases as independent risk factors for seizures in HIV infected patients [3]. Treatment involves the administration of anticonvulsants and medications directed at the underlying cause that is, HIV infection.

Bilateral dislocations are rare and when they occur, they are almost always posterior. Seizures account for 50% of posterior shoulder dislocation and 90% when there is an associated fracture; other causes include electrocution and sporting injuries [4-7]. Bilateral anterior dislocations are far less common, although, unilateral anterior shoulder dislocation is one of the commonest injuries known to man. Posterior shoulder dislocations are rare, accounting for less than 5% of all shoulder dislocations [8]. However, during seizures, contraction of the relatively weak external

rotators of the shoulders and the posterior fibers of the deltoid are overcome by the more powerful internal rotator (subscapularis). The adduction and internal rotation of the shoulder commonly results in a posterior dislocation [9].

While acute dislocations of the shoulders can be treated by closed manipulation, immobilization and physiotherapy, fracture-dislocations pose a serious challenge even in the acute stage.

Bilateral posterior fracture-dislocations of the humerus present with atypical symptoms with a relatively high rate of missed diagnosis [10]. Also, the shoulder contour may appear normal at presentation making early diagnosis difficult. However, a prominent acromial process and a dimple anteriorly may be a pointer to further careful examination of the shoulder joint as was the case in this patient (Figures 1a-d).

Rarely, bilateral posterior dislocations may also occur with fractures of the surgical neck of the humerus as in this case and often require surgical fixation. [6,11,12] A high index of suspicion is needed to make a diagnosis as good outcome depends largely on early and accurate diagnosis [1]. Open reduction is indicated in late presentation of bilateral shoulder dislocations and the results are usually poor [13,14] due to the weakness of rotator cuff muscles and articular cartilage changes.

In rare cases associated with fractures of the surgical neck, open reduction and internal fixation is necessary [6,15,16]. When the patient presents late, such as the index case or elderly patients, hemiarthroplasty may be the best option [5,17]. Alternatively, a proper physiotherapy regime may be adequate for a good functional outcome, [18,19] as was obtained in this case

Conclusion

Bilateral posterior shoulder fracture-dislocation is a very rare condition that usually results following convulsive seizures. The diagnostic evaluation of a generalized seizure often takes the attention of the clinician away from the shoulders and the fact that the contour of the shoulder may appear normal to the cursory observer, a high index of suspicion is required to make an early diagnosis. However, in patients presenting very late, especially in resource poor environments, a proper physiotherapy programme may achieve a good and acceptable functional outcome.

References

1. Ng ABY, Rix TE and Roy BR. Acute bilateral anterior dislocations of the shoulders. *The Ulster Med J.* 2000; 69(2): 171-172.
2. Garg RK. HIV infection and seizures. *Postgrad Med J.* 1999; 75: 387-390.
3. Gasper G and Alvarez ML. HIV infection and seizures. *Postgrad Med J.* 2000; 76: 523-524.
4. Elberger ST and Brody G. Bilateral posterior shoulder dislocations. *Am J Emerg Med* 1995; 13: 331-332.
5. Lassanianos N and Mouzopoulos G. An undiagnosed bilateral anterior shoulder dislocation after a seizure: a case report. *Case J.* 2008; 1:342.
6. Page AE, Meinhard BP, Schulz E and Toledano B. Bilateral posterior fracture-dislocation of the shoulders: management by bilateral shoulder hemiarthroplasties. *J Orthop Trauma* 1995; 9: 526-529.
7. Ryan J and Whitten M. Bilateral locked posterior shoulder dislocation in a footballer. *Br J Sports Med* 1997; 31:74-75.
8. Ufberg J and McNamara R. Management of common dislocations. In: Roberts JR, Hedges JR, Eds. *Clinical Procedures in Emergency Medicine*, 4th edn. St Louis: W.B. Saunders Company, 2003; 948-960.
9. O'Connor-Read L, Bloch B and Brownlow H. A missed orthopaedic injury following a seizure: A case report. *J Med Case Rep.* 2007; 10(1):20.
10. O'Neill D, Nair JR and Binyamin KA. Simultaneous bilateral posterior fracture dislocation of the shoulders in a young man with unexpected severe vitamin D deficiency. *Int J Gen Med.* 2012; 5: 399-402.
11. Marty B, Simmen HP, Käch K and Trentz O. [Bilateral anterior shoulder dislocation fracture after an epileptic seizure. A case report]. *Unfallchirurg* 1994; 97: 382-384. Martens C, Hessels G. Bilateral posterior four-part fracture-dislocation of the shoulder. *Acta Orthop Belg* 1995; 61: 249-254.
13. Brown RJ. Bilateral dislocation of the shoulders. *Injury* 1984; 15:267-273.
14. Thomas DP and Graham GP. Missed bilateral anterior fracture dislocations of the shoulder. *Injury* 1996; 27: 661-662.
15. Brackstone M, Patterson SD and Kertesz A. Triple "E" syndrome: bilateral locked posterior fracture dislocation of the shoulders. *Neurology* 2001; 56: 1403-1404.

16. Wadlington VR, Hendrix RW, Rogers L F. Computed tomography of posterior fracture-dislocation of the shoulder: case reports. *J Trauma*. 1992; 32:113-115.
17. Fish RM. Electric injury, part II: specific injuries. *J Emerg Med*. 2000; 18:27-34.
18. Cresswell TR and Smith RB. Bilateral anterior shoulder dislocations in bench pressing: an unusual cause. *Br J Sports Med* 1998; 32:71-72.
19. Thomas T, Noel E and Bouvier M. Pitfalls of stiff shoulder: inveterated posterior dislocation. *Clin Rheumatol*. 1995; 14: 467-470.