CASE REPORT

Posterior shoulder dislocation: it's worth another look

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SUMMARY

A 40-year-old woman presented to the emergency department with a painful left shoulder following a fall from a mountain bike. A radiograph of the clavicle and shoulder was carried out. A diagnosis of fractured left clavicle was made, which was treated conservatively in a sling. On day 3, she was reviewed in the fracture clinic and was found to still be in pain with reduced movement of the shoulder joint. A repeat radiograph of the shoulder joint showed a posterior dislocation. This required a closed reduction under general anaesthesia.

BACKGROUND

Posterior shoulder joint dislocation (PSD) is rare, accounting for only 2%–5% of all shoulder dislocations.¹ PSD injuries are also frequently missed, which can lead to a significant morbidity in the affected patient. This case highlights the need for the assessing clinician to be vigilant when reviewing shoulder radiographs, particularly where an obvious fracture is seen, as in this case. It is easy to focus on this as being the cause of pain and stop looking for any other injuries at this point.

CASE PRESENTATION

A 40-year-old woman presented to the emergency department with a painful left shoulder following a fall from a mountain bike, directly onto the shoulder. Her medical history included hypermobility syndrome. She was not on any regular medication. The patient had no history of fractures or dislocations.

On examination, the patient was found to have a swollen left shoulder with very limited shoulder movement, and tenderness of the clavicle. The arm was noted to have no neurovascular deficit. A radiograph of the clavicle and shoulder was requested ([figure 1](#)), and following a review of these by the clinician, a diagnosis of fractured clavicle was made. The patient was treated with a polysling and analgesia. A follow-up appointment was made in the fracture clinic. The patient remained in a lot of pain over the following days, which kept her awake at night. On day 3 post injury, she was reviewed in the fracture clinic, where she was found to be in a significant amount of pain, with very little movement in the shoulder joint. Further radiographs were carried out, which confirmed a posterior dislocation of the shoulder joint ([figure 2](#)). The patient was admitted to the hospital and underwent closed reduction of the dislocated joint under general anaesthesia.

INVESTIGATIONS

A radiograph of the shoulder and clavicle was carried out at presentation ([figure 1](#)). Repeat radiograph of the shoulder joint 3 days later showed posterior dislocation ([figure 2](#)).

TREATMENT

The patient was treated initially with a polysling for the clavicle fracture. Once the posterior shoulder dislocation was recognised, this was treated by closed reduction under general anaesthesia.

OUTCOME AND FOLLOW-UP

Our local practice is to see patients in the fracture clinic within 72 hours of injury presentation. This is in accordance with the British Orthopaedic Association guidelines. Following discharge from the hospital for reduction under general anaesthesia, the patient was followed up in the orthopaedic outpatients department at 2 weeks, where she was found to be making good progress. The patient was also personally contacted by an emergency department consultant and an apology was made for the missed diagnosis.

DISCUSSION

PSD is rare and is often missed.² Missed initial diagnosis of posterior shoulder dislocation has been as high as 79% in some studies, with some cases going unrecognised for months.¹ In comparison, a clavicle fracture is a relatively common finding. The chance of these injuries happening in association is unusual. Fractures associated with posterior shoulder dislocation have an annual incidence rate of 0.6%.³ The majority of these are impression fractures of the articular surface of the head, humeral neck fractures and fractures of the lesser or greater tuberosity. Posterior shoulder dislocations associated with fractured scapula, humeral diaphysis and clavicle are the rarest, accounting for only 6% of all associated fractures.² The presence of an obvious additional fracture makes it highly likely for PSD to be missed. In this case, there was an obvious fracture of the clavicle, which attracted the attention of the clinician, possibly causing them to stop looking for an alternative explanation for the patient's pain. The presence of hypermobility syndrome in the patient may have been a contributory factor, increasing the risk of the shoulder dislocating. On review of the initial radiograph ([figure 1](#)), the presence of the 'light bulb' sign suggested PSD. Dedicated shoulder joint views should be carried out in patients where a shoulder injury is suspected. Clinicians should be wary of the possibility of the presence of another

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Figure 1 Radiograph at presentation showing the clavicle fracture and the light bulb sign.

Figure 2 Radiograph taken on day 3 showing posterior dislocation of the shoulder.

injury if the patient's symptoms are out of proportion with what one would expect from the apparent injury. One of the main reasons for missing PSD is that a lateral axillary radiograph is not taken,¹ as was the case in this patient.

The clinician was informed of the missed diagnosis, and the case was discussed at our monthly clinical governance meeting. The learning points were also shared with radiographers and orthopaedic colleagues. There is now an agreed protocol in place that two views of the shoulder (anteroposterior and axial) are taken if a dislocation is suspected.

Learning points

- ▶ Posterior shoulder joint dislocation (PSD) is rare and should be specifically looked for in all patients with shoulder joint injuries.
- ▶ Associated fractures, although rare, can occur with PSD and must be looked for in order not to miss a significant injury.
- ▶ Intractable pain after initial assessment and treatment, limited range of shoulder joint movement, a history of seizures and hypermobility states are clues that a PSD may be present.
- ▶ Subtle radiograph findings such as vacant glenoid, trough line, rim and light bulb signs are helpful when looking for PSD.
- ▶ Two adequate shoulder radiograph views are required, including an axillary view where dislocation is suspected.

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