Case Report

Missed clavicular fracture in an adult without head injury or polytrauma.
Review of literature and a rare case.

Abstract

We present a case of missed clavicular fracture in a patient with an associated wrist fracture but without head injury.

This is the first case of missed clavicular fracture in an adult, despite adequate imaging, and without head injury presenting two days after the patient was discharged after fixation of the distal radius fracture.

Introduction

Missed injuries can cause significant morbidity and even mortality in trauma patients. The missed injuries are a common occurrence in poly-trauma patients and those who have head injuries. There is lack of literature on the missed clavicular injuries in conscious patients without any head trauma. Though missed injuries of clavicle due to inadequate imaging is reported in children, such cases have not been reported in adults.

Case Presentation

A thirty five year old lady had a motor vehicle injury and sustained intraarticular fracture of the right distal radius. She did not have any loss of consciousness or other signs of head injury. Patient underwent open reduction and plate fixation for right distal radius fracture. On second post operative day patient was stable and discharged home. Patient was able to lift her left upper limb without pain and was even able to lie down turning on to her left side. Two days later the patient had sudden severe pain in the left shoulder area when she tried lifting the jug of water and presented in the emergency. As the review of radiographs of the chest performed during the previous admission (FIG 1), did not show any fractures in the left shoulder area. An emergency room work up for the cardiac event was done which was negative. Patient was administered analgesics and an orthopedic consult was sought, the local findings suggested severe tenderness in the mid clavicular area. A repeat radiograph of the shoulder was sought, which showed a displaced midshaft clavicular fracture (FIG 2). The patient was readmitted and underwent open reduction and internal fixation using a contoured locking clavicular plate.

Discussion:

The missed injuries are a common occurrence in polytrauma patients and those who have head injuries. Tammelin E et al (1) described the missed Injuries in Polytrauma Patients. Kanz KG (2) et al published missed clavicle fracture
leading to deep vein thrombosis following bicycle accident with head and chest trauma. The clavicle injury in their case was missed due to associated head trauma. Alao D (3) et al have brought into light: an inadequate radiograph can result in a missed occult clavicular fracture. The missed injuries to the shoulder region such as scapular fractures and rib fractures are documented in the literature. Martin SD (4) et al described a missed scapular and rib fractures with 23 years follow up. Surgical resection of a distorted inferior medial border of the scapula and dorsal rib prominences relieved the patient’s symptoms. Kim JH (5) observed that the clavicle fractures on anterior-posterior views of skull X-rays in infants are missed. They concluded that the clavicles were recognizable on skull X-rays in most cases, and one should check the clavicles when reading skull X-rays. In their study of risk stratification by injury distribution in polytrauma patients, Horst K (6) et al studied whether clavicular fracture has any role. They observed that clavicular fracture can be diagnosed easily and may be used as a pointer for further thoracic and upper extremity injuries in polytrauma patients that might have been otherwise missed. They suggested special attention should be paid on second and tertiary survey.

There is lack of literature on the missed injuries in adults who are conscious and without any associated head injuries. The literature also lacks information on the incidence of such injuries. Our patient had no associated head or chest injuries, and was conscious and awake. With increasing evidence in the literature regarding the better outcomes in displaced midshaft clavicular fractures, by open reduction and plating, a missed clavicular injury might require a surgery to get a good function in the shoulder. However in our case, the initial imaging and clinical examination was adequate.

This is a rare situation, and we propose that probably an indirect torsional injury to the clavicle might have led to an occult fracture. This would have led to apparent lack of local signs and symptoms and normal function in the shoulder girdle. A subsequent torsional strain would have instantly displaced the occult clavicular fracture, resulting in severe pain in the area. This required a repeat admission and surgery in our patient.

We could not find any such reports in the literature of a missed clavicular injury, detected days after the index trauma, presenting in the emergency room. A missed clavicular injury in a conscious patient might have an impact on the recovery and also medicolegal and financial consequences.

Conclusion:
An occult missed fracture of the clavicle in a conscious adult patient without any head injury is rare. This occult fracture can displace days after the patient being discharged from the hospital without any injuries and might require repeat hospitalization and surgical fixation of the displaced midshaft clavicular fracture. This might have an impact on the recovery and also medicolegal and financial consequences.
Disclosure-Conflict of statement

One of the authors reports personal fees from Mimedx, outside the submitted work;

Fig 1-Initial Chest x-ray was negative for a fracture
Fig 2: Subsequent x-ray of clavicle reveals displacement.
Fig 3 Post op X-Ray showing fixation

Bibliography


