



The Silence of a Precarious Fracture: Road Traffic Accident in a Chronic Spinal Cord Injury Patient

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Abstract

Diagnostic errors continue to haunt the practice of medicine. Emergency Department is one of the high risk medical specialties. Understaffing and work load in Emergency Department add to the burden. Missed injuries are preventable and have impact on patients as well as on the healthcare workers. A 21 year old male patient known case of previous spinal cord injury presented to our Emergency Department after a Road Traffic Accident while he was driving a car with handheld device. He was admitted with a diagnosis of lung contusion. During inpatient course he developed hemoglobin drop. Upon further investigation a fracture of the femur neck was observed which was overlooked earlier. A thorough physical and a radiological examination remains an integral tool for the diagnosis of fractures in a multi-trauma patient. A high index of suspicion must be maintained in all multi-trauma patients. Injuries and fractures can be missed due to physician or patient causes. It is rather unlikely to miss a fracture in a conscious, and an alert patient with no neurological deficit. However, it demands a more rigorous and repeated head to toe examination and further diagnostic methods to rule out any missed fractures in patients with decreased level of consciousness or with a previous neurologic deficit due to inability to elicit pain. The main reason to study medical errors is to try to prevent them.

Keywords: Spinal Cord Injury, Multiple Trauma, Femur Fracture, Missed Fractures.

Introduction

Road traffic accident (RTA) patients unfortunately continue to be amongst the 'frequent flyers' to Emergency Departments (ED). A multiple injured patient presenting with an incomplete history and being unstable starts to brew diagnostic errors. Physicians examining a multiple trauma patients have long been aware that an injury may draw

their attention and divert attention from other potentially dangerous injuries ⁽¹⁾. Diagnostic errors are part and parcel of all branches of medicine and all physicians have potential to make a mistake. Missed injuries usually lead to less optimal outcome for the patient ⁽²⁾. Some patients may die due to the missed injury or suffer a lifelong disability. A missed diagnosis will lead

to a poor confidence of a patient in both the healthcare provider and the healthcare system as well. A majority of the diagnostic errors occur in the Emergency department⁽³⁾. Sometimes, assessment and management of a multiple trauma patient can be a daunting task even for a seasoned emergency physician. However, a proper history, in depth clinical examination and following clear guidelines as dictated by various life support courses help to minimize the missed fractures⁽⁴⁾. The incidence of missed injuries as reported by various studies is variable from 1.3%-39% depending on the methods used by the researchers to retrieve the data^(2, 3). It is of interest to know that most missed abnormalities on radiographs were not difficult to diagnose⁽⁵⁾.

Case Report

A 21 y/o male presented to our E.D after RTA while he was driving a car using a handheld device. GCS was 15/15. He complained of right sided chest pain. Patient was paraplegic with a sensory level at T-7 due to a previous gunshot injury. After resuscitation and imaging patient was admitted with the diagnosis of right sided lung contusion and rib fractures. However, patient started to have a drop in hemoglobin levels during the inpatient course. Packed RBC's were transfused. After two days of stay due to continuous drop in Hb levels a repeat Chest and abdomen/pelvis CT with contrast was performed. The CT revealed right sided lung contusion as earlier and as well as liver contusion (5x4 cm) which was not present in the previous study. A right intertrochanteric femur fracture also caught the radiologists eye and open reduction and fixation was done. Rest of the inpatient course and six months after the discharge were uneventful.

Discussion

The management of the multiple injured patient requires the rapid assessment of the injuries and institution of life preserving therapy. As timing is crucial a systematic approach as endorsed by various life support course that can be rapidly and

accurately applied is essential^(6,7). A rapid primary survey, famously recalled as ABCDEs (airway & C-spine, breathing, circulation, disability, exposure & environment) followed by a detailed head to toe secondary survey is the standard of management in trauma^(2,4,6). In our patient the complete exposure (E) appears to have been missed which further led to impediment in secondary head to toe survey too. The potential for missing an injury is great especially in an unconscious or a patient with a neurologic deficit^(3,6). In the present case due to previous spinal cord injury (SCI) the patient did not feel any pain despite a major fracture. The most common reasons for errors are misreading radiographs and failure to perform a radiograph⁽⁵⁾. Lower limb fractures are not uncommon (incidence 1%-6%) in patients with SCI and osteoporosis and muscle weakness may play a role⁽⁸⁾. The fractures were caused by relatively minor trauma such as being turned in bed and few patients even did not recall of any event⁽⁹⁾. NICE recommends whole body CT (vertex to mid thigh) in adults with major blunt trauma with suspected multiple injuries⁽¹⁰⁾. Doctors either have ignored patients complains of pain or have been distracted by injuries elsewhere or being unable to elicit pain due to head injury, alcohol or drugs⁽²⁾. The majority of the errors are made by junior doctors (even up to 85%). However, most of the new patients are also seen by them. Locum Physicians also constitute a high risk. ED consultants and even senior radiologists (3.4%) form a small proportion.^(2,5) Fractures can exist without being evident on examination or imaging⁽⁶⁾. Physicians should learn to accept that errors are made and need to be identified with a no blame culture. A high index of suspicion with a continuous assessment and training of physicians with life support courses, a senior cover in the shift with readily available radiographic reports will help to reduce the incidence of missed injuries.

The authors declare having no conflict of Interest.

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