Emergency Medicine: Open Access
ISSN: 2165-7548

Muthu and Kaneson, Emergency Med 2015, 6:1
DOI:10.4172/2165-7548.1000300

CaseReport Open Access

A Missed Diagnosis of Cervical Spine Fracture in Alcohol Intoxicated Patient

Ramesh Muthu* and Surekha Kaneson

Hospital Tuanku Ampuan Najihah Kuala Pilah, Negeri Sembilan, Malaysia

Abstract

Introduction: A significant cervico-thoracic spondylolisthesis with bilateral facet joint dislocation is very unstable and can lead to devastating consequences if not diagnosed early. Symptomatic spondylolisthesis is frequently missed at Emergency Department (ED) due to various reasons. Besides inadequate radiographs, lack of cooperation by patients who are under alcohol intoxication is also one of the causative factors resulting in missed diagnosis of cervical spine fracture during the clinical assessment.

Case Presentation: Forty three year old man, a chronic alcoholic presented to our emergency department with a missed diagnosis of C7-T1 anterolisthesis with bilateral facet joint dislocation. He had a fall from a height and sustained neck pain. Patient had multiple visits to our ED for the same complaint and was noted intoxicated with alcohol during both his visits. The radiograph images of the cervical spine did not include the vertebral spine below C6 in lateral view. It was interpreted as negative for fracture or dislocation, therefore the patient was discharged with analgesics. Subsequently, the patient developed bilateral lower limb weakness and loss of function of his fingers.

Conclusion: An accurate and detailed history, physical examination and diagnostic imaging are essential for the diagnosis of cervical spine injury in alcohol intoxicated patients. These are not to be missed in order to avoid medico legal issues in the future. This case will not be missed if the fundamental rules of assessing a cervical lateral x-ray are followed.

Keywords: Cervico-thoracic spondylolisthesis; Missed diagnosis; Alcohol intoxication

Introduction

Traumatic cervico-thoracic spondylolisthesis is a crucial orthopaedics emergency. Significant spondylolisthesis may alter cervical mechanics. Up to 30% of these patients may suffer permanent neurological complications [1]. A cervical spine injury can go undiagnosed or missed diagnosed if complete history is not taken from the patient, inadequate physical examination done by the doctor, patient under alcohol influence or if a radiograph failed to demonstrate a lesion properly. According to Davis JN, the rate of missed diagnosis of cervical spine injuries in Emergency Department (ED) due to various reasons ranges from 5% to 20% which is potentially disastrous [2]. The following case report describes the missed diagnosis for an alcohol intoxicated patient with a neglected cervical spine injury followed by a dislocated lower cervical spine which has progressed to the unusual secondary deficits.

Case Presentation

Forty three year old man, a chronic alcoholic presented to our ED with a complaint of unable to walk. The patient stated that he had already visited ED twice for his neck pain following a fall from a tree at a height of 10 feet. He was treated conservatively with analgesics; however the pain led to bilateral lower limb weakness. The first and second visits were made on day two and day five of trauma respectively. During his both visits, patient walked into ED and complained of neck pain. He was noted to be intoxicated with alcohol during both his visits. His Glasgow Coma Scale was 15. However, he was not cooperative and the medical officers who examined him had difficulty in performing a complete clinical assessment. Physical examination revealed mild tenderness over the lower cervical region but no neurological impairment during both the visits. The radiograph images of the cervical spine were poorly visualized in AP view and they did not include the vertebral spine below C6 in lateral view.

Radiographic findings were interpreted as negative for fracture or dislocation, therefore the patient was discharged with analgesics (Figure 1).

On musculoskeletal examination by the orthopaedic medical officer, the grip power of the patient was 1/5 and 2/5 on the right and left upper limb respectively whereas all lower limb muscle groups showed power 1/5. Computed tomography (CT) scan and Magnetic Resonance Imaging (MRI) of the cervical were performed. CT scan showed grade II C7-T1 anterolisthesis with bilateral C7/T1 facet joint dislocation and minimal spinal stenosis. Following review of all films and musculoskeletal examination, the patient was recommended for stabilisation surgery of the cervical spine and was transferred to the orthopaedic ward. Surgery was delayed because of financial constraints the patient subsequently developed severe lung infection and died at the intensive care unit.

Discussion

A thorough neurological examination is mandatory for patients who sustained neck pain following fall from a height and suspected of alcohol intoxication as in this case. Even though cervical spine radiographs have limitations, it is still warranted for all trauma patients with neck pain. If x-rays are not satisfactory, a CT scan of the area in question should be obtained. A study conducted by Platzer has shown incidence of missed diagnosis of cervical spine fracture is 4.9% where the three main reasons are: lack of experience in evaluation of radiographs

***Corresponding author:** Ramesh Muthu, Hospital Tuanku Ampuan Najihah Kuala Pilah, Negeri Sembilan, Malaysia, Tel: +60196585874; E-mail: rameshmithuu@gmail.com

Received October 10, 2015; **Accepted** Decemberr 01, 2015; **Published** December 08, 2015

Citation: Muthu R, Kaneson S (2015) A Missed Diagnosis of Cervical Spine Fracture in Alcohol Intoxicated Patient. Emergency Med 6: 300. doi:10.4172/2165-7548.1000300

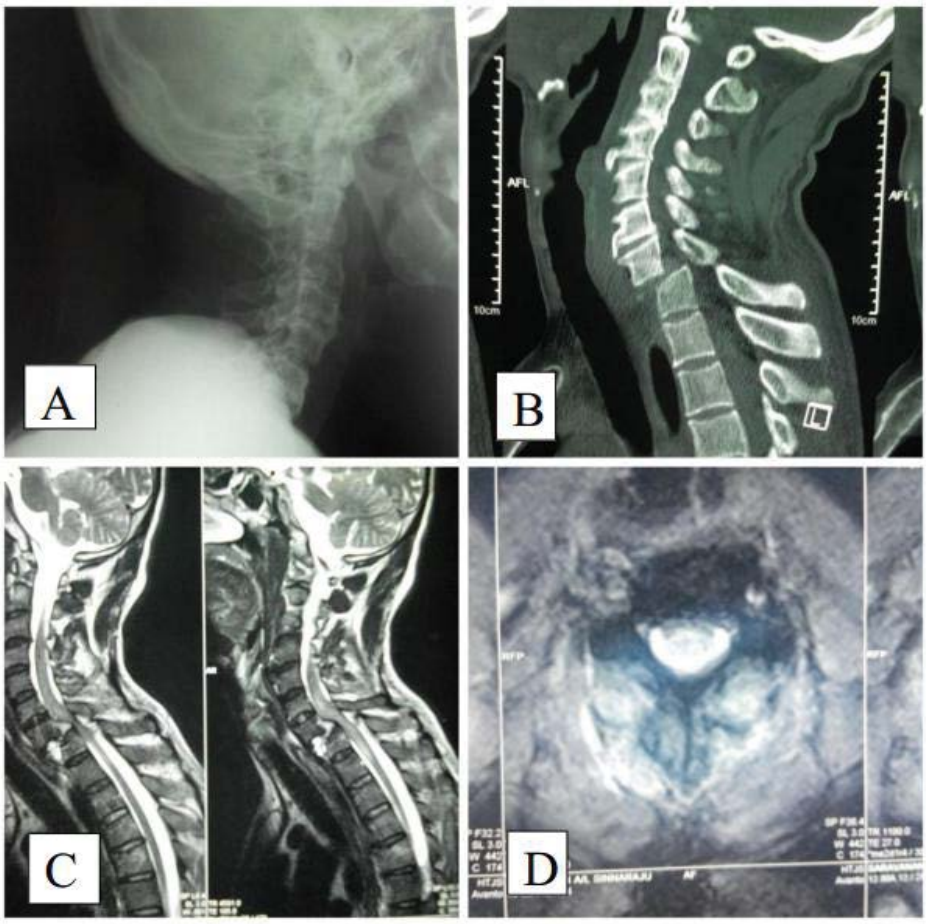

Figure 1: (a) Plain x-ray film image not included the vertebral spine below C6.

(b) CT cervical spine sagittal images showing anterolisthesis of C7-T1 vertebrae.

(c) Sagittal T2 weighted MRI showing anterior angulation and narrowing of the spinal canal at C7-T1 level.

(d) Axial T2-weighted MRI showing the existence of spinal cord compression.

leading to misinterpretations, inadequate radiographs and incomplete sets of radiographs [3]. If the mechanism of injury suggests potential cervical spine injury, we must assume that the cervical spine injury exists until proven otherwise. Patients who are under the influence of alcohol and are not cooperative for clinical examination, x-rays and CT scan must be adequately protected with a cervical collar and spine board. Patients with alcohol intoxication may become combative when tied to the board. Attempts to manually restrain the patient's head against his will significantly increase the stress upon the patient's cervical spine. Pharmacological control of the patient may be required until the cervical injury can be reliably demonstrated or excluded.

Conclusion

An accurate and detailed history, physical examination and diagnostic imaging of the cervical spine are essential for the diagnosis of cervical spine fracture in an alcohol intoxicated patient with symptomatic cervical injury is not to be missed. This case will not be missed if the fundamental rules of assessing a cervical lateral x-ray are followed. We are presenting this case to illustrate the importance of timely recognition of the cervical injury in alcohol intoxicated patient in order to rule out medico legal issues in the future.

References

1. Gerrelts BD, Peterson EU, Mabry J, Peterson (1993) Delayed diagnosis of cervical spine injuries. J Trauma 31: 1612-1626.
2. Davis JN, Phreamer DL, Holyt DB, Mackersie RC (1993) The etiology of missed cervical spine injuries. J Trauma 34: 342-346.
3. Platzer P, Hanswirth N, Javindl M, Chatwani S, Chung R, et al. (2005) Evaluation of a computed tomography- based protocol. J Trauma 59: 179-183.