

CASE REPORT

A Case of Missed Thoracic Fracture Masquerading as Intra-Abdominal Injury

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ABSTRAK

Keadaan status mental yang rendah di dalam politrauma merupakan cabaran kepada pasukan kecemasan dalam pengurusan pesakit. Kecenderungan untuk terlepas penemuan positif dalam keadaan ini meningkat beberapa kali ganda kerana pelbagai faktor seperti kemurungan/kemabukan, kehadiran kecederaan yang mengganggu dan kecederaan yang mengancam nyawa serentak, menyebabkan perlunya memberi perhatian yang lebih mendesak. Memandangkan keadaan ini, kriteria NEXUS (Kajian Penggunaan X-Radiografi Kecemasan Nasional) untuk memeriksa tulang belakang servikal telah diterima pakai dan digunakan di seluruh dunia. Walau bagaimanapun, tiada kata sepakat untuk memeriksa bahagian lain tulang belakang. Kes ini melaporkan seorang lelaki berusia 18 tahun dengan status mental berubah, sakit dan luka di bahagian muka akibat kemalangan jalan raya. Kepatahan di bahagian muka disahkan dan dia dibenarkan keluar dari hospital. Tiga hari kemudian dia kembali dengan sakit epigastrik yang teruk. Sakit pada bahagian belakang mendorong imbasan CT dilakukan. Beberapa vertebra toraks didapati patah. Sebagai kesimpulan, pemeriksaan primer dan sekunder yang menyeluruh perlu dilakukan pada pesakit yang telah sedar semula sebelum dibenarkan pulang.

Kata kunci: status mental berubah, vertebra toraks, kepatahan, imbasan CT

ABSTRACT

Altered mental status in the setting of polytrauma poses a challenge to the emergency team managing the patient. The tendency to miss positive findings in these circumstances increases several folds due to multiple factors such as depressed mental status/intoxication, presence of distracting injuries and concurrent life-threatening injuries that require more urgent attention. In view of this, NEXUS (National Emergency X-Radiography Utilization Study) criteria of clearing the cervical spine was adopted and used worldwide. Consensus on clearance of the

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other parts of spine is still lacking. This case reports highlights the findings in a 18-yrs-old male who presented with altered mental status, facial pain and abrasion, following a motor vehicle accident. Facial bone fracture was diagnosed and he was discharged. Three days later, he came with severe epigastric pain. Tenderness on palpation was noted at the spine and Computed Tomography (CT) scan was done. Multiple thoracic vertebra fractures were seen. As a conclusion, thorough primary and secondary survey should be done in patients who have regained full consciousness prior to discharge in order to avoid overlooking other serious injuries.

Keywords: altered, CT scan, fracture, mental status, thoracic vertebra

INTRODUCTION

Fracture of thoracolumbar spine may occur following high impact accidents. Cooper and colleagues stated that the incidence of thoracolumbar spinal fracture can be as high as 50% in blunt traumas (Cooper et al. 1995). Hsu and colleagues proposed radio imaging of the thoracolumbar spine in all victims of high impact accidents in the presence of midline tenderness, local signs of thoracolumbar injury, abnormal neurological signs, cervical spine fracture, GCS < 15, major distracting injury, and alcohol or drug intoxication (Hsu et al. 2003).

This was a case of an 18-yrs-old male, who presented with altered mental status and multiple abrasions wound over the face following a motor vehicle accident. Thoracolumbar spine fracture was missed during the first admission. This can be avoided by thorough primary and secondary examination followed by required radiological examination.

CASE REPORT

A previously well, 18-yrs-old male was involved in a motor vehicle

accident. He could not recall the exact mechanism of his injury. His Glasgow coma scale (GCS) was 14/15. He suffered multiple abrasion wounds over the maxillary area. Face computed tomography (CT) showed facial bone fracture with no intracranial bleeding. Following complete recovery of his GCS, he was discharged 6 hrs, later. Three days later, he presented to emergency department with severe epigastric pain. The pain was described as pricking in nature and radiated to the back. He was still able to walk, had no vomiting, chest pain or fever. Vital signs were stable. Tenderness was felt over T6-T8 vertebrae. There were no neurological abnormalities. Focussed Assessment using Sonography in Trauma (FAST) showed no positive findings. Due to raised suspicion of thoracic injury CT spine was done and showed burst fracture of T7 vertebral body with compression fracture of T6 and T8 (Figure 1). He was referred to orthopedic team and was admitted for surgical intervention. The patient underwent posterior instrumentation and fusion from level of T6-T10 four days after admission. Post-operative physiotherapy was done and he



Figure 1: Thoracic spine CT. Burst fracture at T7 (a). Compression fracture at T6 (b) and T8 (c)

was able to self ambulate prior to discharge.

DISCUSSION

There are few case reports describing thoracic injury presenting as abdominal pain. Xiong et al. (2001) described a young lady who presented with abdominal pain and found to have a thoracolumbar fracture. We need to bear in mind that abdominal pain is an atypical presentation of thoracic injury. This should be suspected in patients complaining of abdominal pain where intra abdominal injury has been ruled out. The presentation of thoracic injury was similar to a previous case report in which radiculopathic pain resulted from nerve root compression (Xiong et al. 2001). Nerve root compression can produce poorly localized pain which may present as a non specific abdominal pain. Pain may be intermittent or constant and is usually described as electric, burning,

or shooting in nature. As a result from dermatomal distribution, any compressing fracture between T7 and L1 can present as referred abdominal pain.

There are number of factors that contribute to delay in diagnosis. Substance intoxication, multiple injuries, altered level of consciousness and two level spinal cord injuries are among factors reported to cause delay in diagnosis (Reid et al. 1987). A trauma patient with concurrent low GCS and persistent complaint of abdominal pain should be suspected to have a possible thoracolumbar fracture if intra-abdominal injury has been ruled out. A screening criteria or tools similar as the NEXUS criteria in cervical spine clearance should be used in order to determine patients that require a CT of the thoracolumbar spine.

CONCLUSION

Thoracolumbar spinal injury may easily be missed in a trauma patient with altered mental status and distracting painful injury. Currently, there is no established guideline in ruling out thoracolumbar spine injury such as NEXUS or Canadian CT rule for cervical spine injury. We would advocate a thoracolumbar CT for any abdominal pain following trauma with normal abdomen CT.

REFERENCES

- Cooper, C., Dunham, C.M., Rodrigues, A. 1995. Falls and major injuries are risk factors for thoracolumbar fractures: cognitive impairment and multiple injuries impede the detection of back pain and tenderness. *J Trauma* 38(5): 692-6.

- Hsu, J.M., Joseph, T., Ellis, A.M. 2003. Thoracolumbar fracture in blunt trauma patient: guidelines for diagnosis and imaging. *Injury* **34**(6): 426-33.
- Reid, D.C., Henderson, R., Saboe, L., Miller, J.D. 1987. Etiology and clinical course of missed spine fractures. *J Trauma* **27**(9): 980-6.
- Xiong, Y., Lachmann, E., Marini, S., Nagler, W. 2001. Thoracic disk herniation presenting as abdominal and pelvic pain: a case report. *Arch Phys Med Rehabil* **82**(8) : 1142-4.

Received: 21 December 2016

Accepted: 21 February 2017