CASE REPORT

Spinal Trauma is Never without Sin: A Tetraplegia Patient Presented Without any Symptoms

Spinal Travma Masum Değildir: Asemptomatik Başvuran Tetrapleji Olgusu

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SUMMARY

Spinal cord injuries are amongst the most dangerous injuries, leading to high mortality and morbidity. Injured patients are occasionally faced with life-threatening complications and quality-of-life changing neurological deficits. Thoracic and cervical spinal segments are the most effected sites of injury and a wide range of complications including paraplegia, respiratory and cardiovascular compromise secondary to autonomic dysfunction or tetraplegia may ensue. We aim to draw attention to the progressive nature of the neurological deficits in a patient admitted asymptomatically. Also, we would like to discuss the importance of swift diagnosis and management in such patients. In asymptomatic patients in whom no fractures are diagnosed with CT scans, a neurological examination should be repeated several times to exclude any neurological injuries that were missed. MRI should be ordered in an emergency setting even though it is not frequently used as a diagnostic modality. This should be done especially in patients without any fractures on CT but with neurological signs.

Key words: Motor vehicle accident; MRI myelography; spinal injury; spinal radiology; tetraplegia.

ÖZET

Spinal kord yaralanmaları yüksek mortalite ve sakatlanma oranlarına neden olan en tehlikeli yaralanmalar arasında sayılmaktadır. Etkilenen hastalarda sıklıkla yaşamı tehdit edici komplikasyonlar ve hastanın hayat kalitesini etkileyen nörolojik bozukluklar gelişebilmektedir. Torakal ve servikal segmentler en sık etkilenen yaralanma yerleri olup, hastalarda otonom disfonksiyona ikincil parapleji, solunumsal ve kardiyovasküler bozukluklar gelişebilir ya da tetrapleji görülebilir. Bu olgu sunumuyla, semptomsuz olarak başvuran bir hastanın nörolojik bozukluklarının ilerleyici doğasına dikkat çekmek istiyoruz. Ayrıca, bu tip hastalarda hızlı tanı ve yönetimin önemini tartışmak istemekteyiz. Semptomsuz olarak başvuran ve bilgisayarlı tomografilerinde kırık saptanmayan hastalarda nörolojik muayene sık aralıklarla tekrarlanarak herhangi bir nörolojik hasarın gelişip gelişmediği izlenmelidir. Acil servislerde manyetik rezonans görüntüleme sık kullanılan tanı testlerinden biri olmamasına rağmen özellikle bilgisayarlı tomografisinde herhangi bir patoloji tespit edilmeyen ancak nörolojik bulguları mevcut olan hastalarda mutlaka istenmelidir.

***Anahtar sözcükler**: Motorlu taşıt kazası; MR miyelografi; spinal yaralanma; spinal görüntüleme; tetrapleji.*

Introduction

Spinal cord injury (SCI) is an injury causing temporary or permanent damage to the motor, sensory and autonomic function of the spinal cord. Generally, permanent and progressive neurological disorders are seen.[1] Life threatening complications and neurological disorders affecting quality of life can develop in these patients.

Thoracic and cervical segments are affected most and paraplegia secondary to autonomic dysfunction, respiratory or cardiovascular disorders or tetraplegia can be seen.

While SCI patients can rarely present asymptomatically, progressive neurological disorders and death can be seen due to edema and secondary injury. For this reason, all SCI cases

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should be thoroughly examined and accompanying pathologies must be excluded.

In this case report, the progressive nature of the neurological disorders in an asymptomatic SCI case, its diagnostic processes and treatment are discussed, with an attempt to emphasize the importance of the approach to injuries with dangerous mechanisms.

Case Report

A 59-year-old male patient with known cervical stenosis was brought to the emergency department by provincial ambulance after being involved in a traffic accident as a pedestrian. The patient was on a trauma board with a cervical collar upon arrival. His general condition was good; he was conscious, cooperative and oriented. His Glasgow Coma Scale score (GCS) was calculated as 15 (E4, V5, M6). The patient's vital signs were unremarkable except borderline hypotension (blood pressure 90/65 mmHg, pulse 74/min, PSO_2 90%, temperature 36.2°C). According to the information obtained from the patient himself, the vehicle struck him on the diagonal directly in the back area and he experienced a temporary loss of consciousness and vision for three to four minutes afterwards. Upon physical examination, other than a 3 cm cutaneous-subcutaneous laceration on the left parietal area, there were no visible injuries. The neurological examination displayed that motor strength was full on all extremities; however, there was decreased rectal tone upon digital rectal examination. The patient was given 1000 cc of saline through a 16 gauge intravenous catheter in both antecubital areas, and tetanus prophylaxis was given. Laboratory findings were unremarkable (white blood cell: 12.700/mm^3, hemoglobin: 14.3 g/dL, MCV: 81 fL, platelets: 235000/dl, glucose: 115 mg/dL, urea: 45 mg/dL, creatinine: 1.2, AST: 15 U/L, ALT: 23 U/L, Na: 143 meq/L, K: 3.4 meq/L, INR: 0.98). Transverse, sagittal and axial slice computed tomography (CT) scans (cranial, spinal, thoracic and IV contrast abdominal and pelvic) examinations were evaluated by the on duty radiologist (1st Radiologist), and a verbal and written report was given stating there were no pathological features. However, evaluation of the CT images by Emergency Medicine physicians revealed a stable fracture of the left lamina on C1 vertebrae. Vital sign evaluation repeated approximately one hour later during the follow up of the patient was as follows: blood pressure: 105/70 mmHg, Pulse: 80 pm, PSO_2: 98%, temperature: 36.5°C. Repeat physical examination revealed a motor weakness in the lower extremities, followed by loss of touch and motor weakness in the upper extremities. With the patient rapidly progressing to tetraplegia, a full spinal magnetic resonance imaging (MRI) scan, along with a thoraco-abdominal CT angiography to rule out vertebral artery dissection due to the suspected C1 fracture and an aortic dissection if the progressive tetraplegia was caused by a vascular pathology was carried out. In the diffusion MRI of the patient, whose CT had been unremarkable and vascular pathologies were ruled out according to radiology reports (1st and 2nd Radiologists), an acute cerebral infarct (Figure 1) in the parieto-tempero-occipital region was prominent. In the spinal MRI (2nd Radiologist) central protrusions of the intervertebral discs along C2-C7 were exerting pressure on the spinal cord and a narrowing of the antero-posterior diameter of the spinal canal was present; there was edema secondary to contusions on the C2-C3, C3-C4 levels (Figure

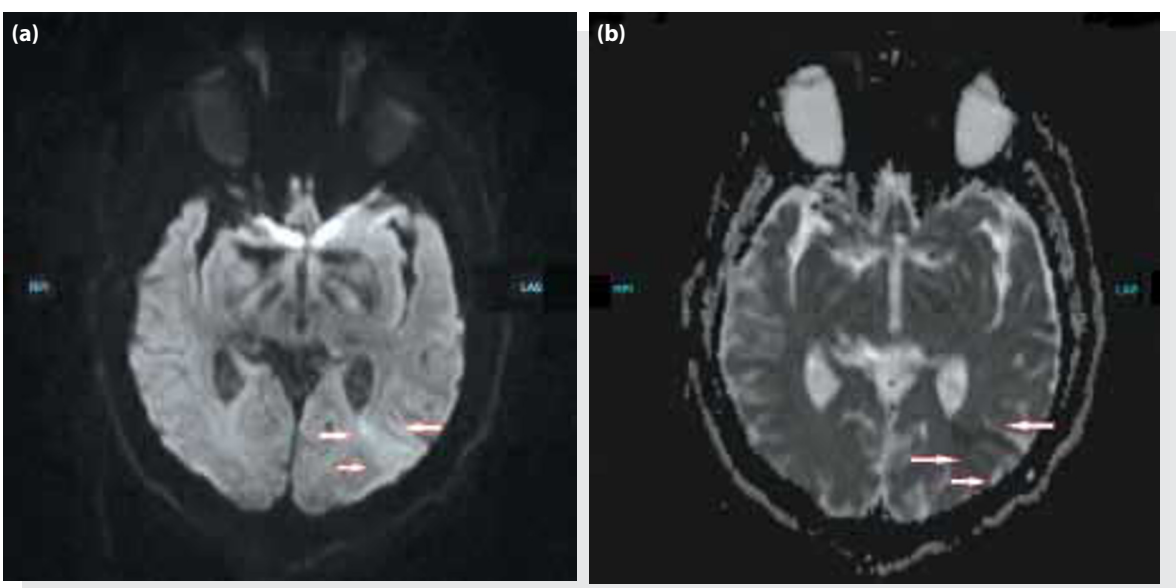

Figure 1. (a) Acute infarction in the left parietal-tempero-occipital region in diffusion magnetic resonance imaging. **(b)** Its ADC diffusion magnetic resonance imaging.