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Traumatic Cervical Pneumorrhachis

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Abstract

Introduction

Pneumorrhachis refers to air within the spinal canal. Traumatic pneumorrhachis is a very rare entity of which there are only a few reported cases. We present a young male who sustained cervical pneumorrhachis following a road traffic accident.

Case Report

A 25 year old man was brought to the emergency department after being struck by a car, having sustained head injuries. On arrival, his vitals were stable, pupils equal and reactive and moving all his limbs appropriately. His Glasgow Coma Scale (GCS) on arrival was E4 V2 M6. Blood was noted in the right external auditory meatus. He became agitated and restless needing intubation and ventilation. Trauma series Computer Tomography (CT) scans of the brain (Fig 1A, B) and spine (Fig 2A, B) revealed bilateral cerebral contusions, right temporal bone fracture with petechial haemorrhage, pneumocephalus and air in the spinal canal at C1-4 vertebrae levels.

Discussion

We believe the pathogenesis of pneumorrhachis in our patient is the result of right temporal bone skull base fracture which caused a tear in the dura mater overlying the bone. This in turn provided a direct communication between the pneumatised mastoid bone and the intracranial space. Air then travelled through the punctured dura mater into the prepontine cistern. The increased intracranial pressure, resulting from the cerebral contusions and oedema, forced the penetrated air to travel caudally in to the cervical subarachnoid space.

Conclusion

Intraspinal air is often an iatrogenic phenomenon. Traumatic pneumorrhachis associated with head injury is extremely rare. It is thought to be a marker of the severity of trauma. Pneumorrhachis is often a self-limiting condition. Management should be individualised but remains mostly conservative. In the presence of pneumorrhachis trauma specialist should always search for accompanying injuries and beware of potential complications such as meningitis and tension pneumocephalus.

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