Cervical cord transection secondary to C2-C3 dissociation

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CASE REPORT

A 14-year-old previously healthy female was brought to the emergency department (ED) after being involved in a high speed motor vehicle accident. After resuscitation, a computed tomography (CT) scan brain revealed multifocal intraventricular and subarachnoid hemorrhage (Figure 1). CT scan of the cervical spine showed a traumatic spondylolisthesis at C2/C3 with posterior displacement of C3 vertebral body indicating a probable spinal cord injury at the C2/C3 level (Figure 2). MRI scan of the cervical spine showed a severe cervical central spinal canal stenosis with cord displacement and compression reflecting a combination of contusion and myelopathy (Figure 3). The patient was diagnosed with cervical cord transection due to C2-C3 dissociation. She underwent posterior arthrodesis extending from the occiput C1 to C1-2, C2-3, C4-5, C5-C6; using of an occipital place, lateral mass screws fixation under live fluoroscopy (Figure 4). Because of a surgical wound CSF leak, a lumbar drain was placed for one week. After two month as an inpatient, the patient was only able to move her facial muscles and had suffered from stage 2 bed ulcers. She was medically and hemodynamically stable, and was discharged to a traumatic brain injury facility.

DISCUSSION

The incidence of spinal injuries in children is between 2.7 and 9% of the total spinal injuries [1] with 40 to 60% occurring in the cervical spine [2]. The upper cervical area

Figure 1: Sagittal computed tomography scan Brain showing subarachnoid hemorrhage within the cisternal group as well as hemorrhage within the fourth ventricle (White arrow).

Figure 2: Sagittal computed tomography scan of the cervical spine showing a traumatic spondylolisthesis at C2/C3 with posterior displacement of C3 vertebral body (White arrow).
is the most commonly affected part in spinal injuries of the young children, while the thoracolumbar junctional injuries are more common in older children [3]. A history of trauma, including motor vehicle accident, should alert the attending clinician of an impending spinal injury. Pediatric spinal injury should always be suspected if a child presents to the ED with unconsciousness, torticollis, and neck pain/stiffness, temporary, or fixed neurological deficits [3]. Any pediatric patient who has tenderness, neurological deficit, loss of alertness, intoxication, or distracting painful injury is a candidate for cervical X-rays. Although CT scans may be superior to plain radiographs, they should not be used exclusively for cervical spine clearance because of the possibility of a ligamentous nature of the injury [4]. MRI is useful in children with persistent neurological symptoms. Surgery is usually indicated for unstable injuries. Anterior or posterior approach is best dictated by the column which is maximally disrupted [5].

CONCLUSION

We present the case of a 14-year-old female who presented for cervical cord transection caused by a C2–C3 dissociation to be diagnosed by a cervical spine CT scan and confirmed by a cervical spine MRI. Pediatric spinal injury should be always suspected in a child presenting with neurologic deficits.

REFERENCES


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Authors declare no conflict of interest.

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