

Spinal cord contusion and quadriplegia in a patient with Klippel-Feil anomaly

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Klippel-Feil syndrome (KFS) patients are especially prone to cervical cord injury after a minor fall or a major traumatic episode. (1-9) A 43 year male patient presented with the history of road traffic accident. Following that he was unable to move all four limbs. He had urinary retention for which he was catheterized. Power in upper and lower limbs was grade 0/5. Deep tendon reflexes were absent. There was sensory loss below C4. Blood investigations were normal.

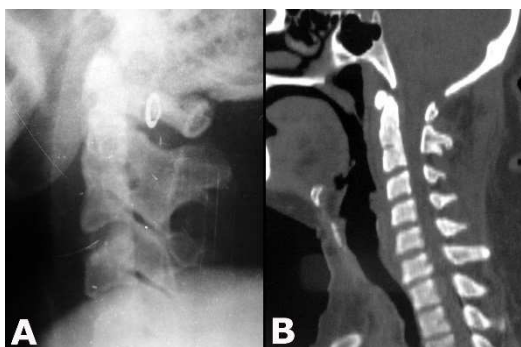


Figure 1 - (A) Lateral x-rays and (B) CT scan of the cervical spine showing C2-3 vertebral body fusion with waist formation

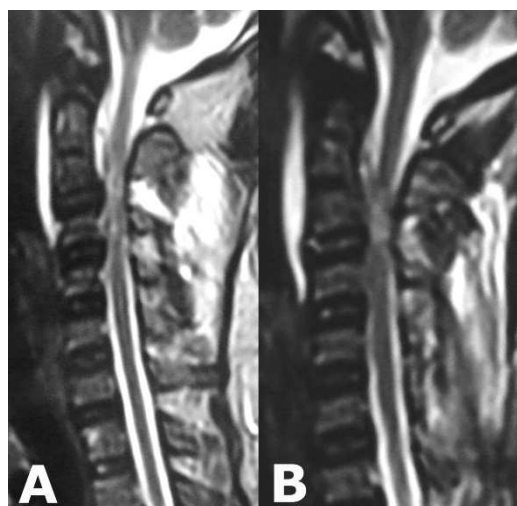


Figure 2 - Magnetic resonance image T2-weighted sagittal images showing a large contusion at C2-3 level in the spinal cord with canal stenosis and C3-4 disc prolapse causing the compression of the dural tube

X-ray cervical spine showed Klippel-Feil of C2-3 (Figure 1). MRI showed cord contusion at C3-4 level with disc prolapsed (Figure 2). The patient underwent anterior cervical approach, cervical discectomy and fixation. He made minimal recovery in his motor power and was totally dependent for activities of daily living.

The marked deformities in KFS patients

result in mechanical distortion altering the compensatory properties of the spine to react to decelerating and rotatory forces thus increase the probability of spinal cord injury with trauma. (4, 6-9) There is multiple mechanisms those make the patients more prone for injuries. There is an increase incidence of spondylotic and discogenic changes at the junctional segments resulting from hypermobile segments adjacent to the fused vertebrae leading to cervical instability. (3-6, 9, 10, 5) This can result in symptomatic herniated cervical disc with spinal cord injury. (5, 6, 9, 10) Apart from this there can be associated spinal canal stenosis, and, hence, increasing the likelihood to develop spinal cord injury in KFS patients even after minor trauma. (6, 11) Management of KFS patients with spinal cord injury depends on the severity of symptomatic segmental instability, presence or absence of disc prolapsed and associated neurological deficits. (9, 12 13) In present case, the young adult patient had Klippel-Feil anomaly C2-3 segments, had disc prolapsed at C3-4 level level and canal stenosis at the fused segments made him prone for spinal cord injury even after trivial trauma.

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