

Laryngeal dislocation during cervical spine surgery

A 60-year-old, right-handed gentleman had presented with features of slowness of gait, ataxia, clumsiness of hands, urinary frequency, and urgency of 6 months' duration. On examination, he had bilateral grip weakness, spasticity of all four limbs, hyperreflexia, and bilateral extensor plantars. Magnetic resonance imaging of the cervical spine revealed diffuse degenerative changes with C4–C5 and C5–C6 disc prolapse causing compression of the thecal sac and signal change in cord at the level of C4 vertebra.

He underwent C4 and C5 anterior median corpectomies with C3–C4, C4–C5, and C5–C6 discectomies; excision of posterior longitudinal ligament; and decompression of thecal sac followed by C3–C6 fixation using bone graft (harvested from the right iliac crest) within an expandable cage with a plate. After skin closure on removing the drapes, he was found to have a firm swelling on the left side of his neck [Figure 1]. Palpation suggested that it was the thyroid cartilage that had got rotated and displaced and moved off the midline. An anteroposterior view of the neck on the C arm showed that the trachea (with the endotracheal tube inside it) had moved off the midline though no retractors were in place now [Figure 2]. Tentative manual pressure was given to the thyroid cartilage in an attempt to reposition it, but it did not yield. Extubation was not attempted as we were unsure if there was laryngeal injury and about the natural cause of this. On inserting the blade of a laryngoscope (Mackintosh blade) to visualize the inlet, there was a clicking sound and the swelling disappeared as the thyroid cartilage relocated



Figure 1: Clinical photograph of the patient preextubation showing a swelling (arrow) on the left side of the neck that was his displaced "Adams apple" (thyroid cartilage prominence)

to the midline. After 20 min, the patient was uneventfully extubated.

We diagnosed this patient to have had a laryngeal dislocation that corrected itself spontaneously with laryngoscopy. This unusual complication following anterior approach for cervical spine has been mentioned only once in literature.^[1] On that occasion, it was due to the cornu of the hyoid bone getting trapped below the implant, which necessitated reoperation to reduce the dislocation. On the other hand, arytenoid cartilage dislocation is a known entity following intubation (0.1% of all cases), which has also been described following cervical spine surgery.^[2] These cases, however, present only with persistent hoarseness and not with any swelling in the neck nor can displacement of the endotracheal tube be seen radiologically.

In our case, we speculate that the dislocation was due to excessive lateral retraction intraoperatively and on attempting direct laryngoscopy, the larynx got straightened and lifted up, thus reversing the rotation and reducing the dislocation. While complications of anterior cervical spine surgery such as dysphagia, wound infection, postoperative hematoma, recurrent laryngeal nerve injury, worsening of preexisting neurological deficits, instrumentation failure, dural injury, graft extrusion, and esophageal injury have been described,^[3] we found no mention in literature of this complication or maneuver in treating it. A computed tomography scan of the neck might have delineated the pathology better (as was done by Krauel *et al.*^[1]), but as the dislocation had reduced itself, it was not done.

Postoperative neck swelling after anterior cervical spine surgery should primarily raise suspicion of an operative-site

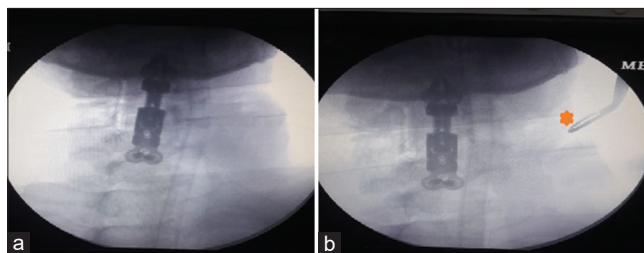


Figure 2: Images (a) from the monitor of the intraoperative fluoroscopy showing the grossly displaced endotracheal tube despite the removal of retraction and (b) a towel holder placed on the skin overlying the thyroid prominence that indicated how much the larynx had been rotated and displaced

hematoma. Our complication may be kept in mind as a rarer differential diagnosis. If suspected, extubation should be deferred till reduction is achieved.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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