Acute Massive Laryngeal Edema in a Case of Decompressive Cervical Laminectomy Through Posterior Approach

Sonali Gupta, Sandhya Agarwal
Department of Anaesthesiology and Critical care, Deen Dayal Upadhyay Hospital, New Delhi, India

Corresponding Author: Dr. Sonali Gupta
sonaligupta494@gmail.com

ABSTRACT

The occurrence of airway obstruction following the posterior approach for cervical spine surgery is not widely recognised. This potentially disastrous complication should be anticipated and the anaesthetic management of airway should be planned accordingly. We present this case report of massive laryngeal oedema following an elective cervical spine decompression surgery via the posterior approach, which has been managed successfully.

Keywords: Acute massive laryngeal edema, airway obstruction, cervical spine surgery, anaesthetic complication

1. CASE REPORT

A 68 years old, male patient was scheduled to undergo elective cervical spine decompressive laminectomy via the posterior approach. The patient had a BMI of 29.5 and controlled hypertension. There were no signs of airway obstruction pre-operatively.

Difficult airway was anticipated in view of large neck circumference (42 cm) and limited neck movements. Hence awake fibre-optic bronchoscopy was used for tracheal intubation with 8.5 mm internal diameter (I.D.) flexo-metallic endotracheal tube. Intra-operatively, the patient was positioned prone with 15 degrees reverse trendelenburg position. The surgery lasted for 4 hours. The total intra-operative blood loss was 600 ml and the intra-vascular volume was replaced with 2 litres of crystalloids and 500 mls of hydroxyl-ethyl-starch. Two drains were left in-situ.

At the end of the procedure, the patient was turned supine with Philadelphia collar in place. Cooks airway exchange catheter was used to rail-road a non-reinforced PVC endotracheal tube, prior to extubation. However, it was unsuccessful to rail road a similar sized PVC endotracheal tube. A video-laryngoscopy was used to examine the upper airway, which revealed massive edema of the laryngopharyngeal region. Hence, we had to use a much smaller PVC endotracheal tube, size 5.5 mm I.D.

The patient was mechanically ventilated for 24 hours in critical care. Radiological examination of the cervical spine was done to rule out pre-vertebral soft tissue swelling. Fibreoptic examination of the airway was done prior to extubation, which revealed that the airway oedema had subsided. The patient had a positive leak test, which confirmed
that the laryngeal swelling had resolved. After adequate recovery of consciousness and reversal of neuromuscular blockade, trachea was extubated. There was adequate patency of the airway.

2. CONCLUSION

Anterior approach for cervical spine surgery is known to cause soft tissue oedema and upper airway obstruction, due to retraction of trachea and esophagus. However, airway obstruction following the posterior approach to cervical spine surgery is not well acknowledged. The common causes for airway obstruction include prevertebral soft tissue swelling and haematoma. The patient was positioned in the reverse trendelenburg position intra-operatively, to minimise venous congestion in the larynx. However, the patient developed massive laryngeal edema, which was managed successfully as described in our case report. Hence, even after the posterior approach for cervical spine surgery, the possibility of airway edema and obstruction should be acknowledged and management of airway planned accordingly.

REFERENCES