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Massive Tongue Swelling as a Complication After Spinal Surgery

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Summary: We report four cases of massive tongue swelling after spinal surgery. Swelling resulted from the position of the spine during surgery (flexed thoracic–cervical position), fixation of the endotracheal tube, additional surgical gauzes packed around the endotracheal tube, and compression of the base of the tongue. Swelling, which causes obstruction of the airway, is a severe complication after spinal surgery that sometimes requires a tracheotomy. This complication can be avoided by careful positioning of the patient and by fixation of the endotracheal tube before surgery. Once swelling of the tongue occurs, administration of a corticosteroid is effective in preventing constriction of the airway. **Key Words:** Massive tongue swelling—Spinal surgery—Complication—Dyspnea.

Massive tongue swelling has been reported to be a complication after intubation (1–5). We report four cases of massive tongue swelling after spinal surgery.

CASE REPORTS

Case 1

This patient was a 51-year-old man with ossification of the posterior longitudinal ligament of the cervical and thoracic spine. He first noticed difficulty in walking in 1991. Posterior decompression at the level of C2–T9 was performed on March 6, 1992. Oral intubation was done with a spiral endotracheal tube 9.0 mm in inner diameter using a Macintosh laryngoscope blade (Table 1). There was difficulty establishing intubation, which was accomplished after three attempts. The cuff was filled with 5 ml of air, and additional gauze was packed around the tube to prevent air leakage. The endotracheal tube was secured at a depth of 23 cm with a bite block and adhesive tape. No oral airway was used in addition to the endotracheal tube. After introducing anesthesia, we placed the patient in the prone position and his head secured to the surgical table using head pins and tongs (Fig. 1). Surgery lasted for 7 h and 15 min. The total amount of fluid administration was 4,580 ml. Two hours after surgery, swelling of the tongue became apparent and obstructed his airway. The patient was transferred to the intensive care unit (ICU) and a tracheotomy was performed. He could not close his mouth due to a severely swollen tongue, which protruded from his mouth. Oral ingestion was not possible. Although a corticosteroid was administered for 3 days, swelling continued for 2 months and necrosis occurred in part of his tongue (Fig. 2). The tracheal tube could not be removed until 53 days after the operation.

Case 2

This patient was a 60-year-old man with cervical myelopathy and lumbar canal stenosis. He had noticed a walking disturbance and numbness in his upper and lower limbs in December 1989. Cervical laminoplasty (C3–C7) was performed on December 22, 1992 (Table 1). Oral intubation was performed with an 8.5-mm-inner-diameter endotracheal tube (Portex) and using a Macintosh laryngoscope blade. Intubation had to be attempted twice because of difficulty with bleeding from his oral mucosa. The cuff was filled with 6 ml of air and

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