operation. Significant leaks can develop after traumatic attempts at nasotracheal intubation due to consequent posterior nasopharyngeal mucosal lacerations.

In conclusion, this case illustrates for anesthesiologists and emergency care physicians one of the potential complications of nasal intubation associated with maxillofacial trauma. Severely traumatized patients requiring immediate operation might best be initially managed with insertion of the necessary tubes through the mouth under direct vision. However, use of a nasotracheal tube rather than an oral tube may be essential for the repair of extensive maxillofacial trauma; otherwise, the relationship of the jaw cannot be established. In such cases, after repair of the nasal fractures, it is possible to change the orotracheal to a nasotracheal tube. However, this maneuver should be performed with utmost care, since unsuspected fractures of the ethmoid plate or maxillary sinuses may exist. Rarely, if a surgical repair cannot be conducted with an orotracheal tube, a transient tracheostomy is needed.

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Massive Swelling of the Head and Neck

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Macroglossia has recently been added to the list of possible complications of anesthesia for neurosurgery in the sitting position, the explanation being that there is bilateral occlusion of the lingual vein from the pressure of the endotracheal tube and oral airway on the tongue with the head in the extreme flexed position. This is a case report of massive swelling of the head, neck, and tongue which occurred after prolonged neurosurgery in the sitting position.

REPORT OF A CASE

A 21-year-old Caucasian man was admitted to the hospital with a history of loss of consciousness, headaches, and visual disturbances. Investigations revealed an arteriovenous malformation of the left parieto-occipital region. A month later the patient underwent craniotomy with ablation of the arterial feeders of the malformation. Anesthesia was induced with sodium thiopental. Following administration of succinylcholine, the trachea was intubated easily with a 34 anode tube, and a medium-sized plastic oral airway was inserted. Anesthesia was maintained for 13 hours with nitrous oxide, oxygen, halothane, d-tubocurarine, and hyperventilation. A posterior-fossa craniotomy was performed with the patient in the sitting position with the back up 20 degrees, the head held in a Gardner clamp. The immediate postoperative period was uneventful. However, the patient developed right-sided weakness, and arteriography revealed incomplete removal of the arteriovenous malformation.

The patient returned for a second operation a month later. The same anesthetic technique was used, with the addition of prolonged hypotension (mean pressure 55 mm Hg) with the patient in the same body position. Towards the end of the 14-hour procedure, swelling of the brain was noted. Despite intravenous administration of steroids and mannitol, the swelling was too great to allow replacement of the bone flap. At the end of anesthesia, some swelling of the tongue and lips was noted, though it was thought not to be significant enough to embarrass respiration. However, after extubation of the trachea the patient evidenced immediate respiratory distress. Ventilation

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with a mask and Ambu bag, with an oral airway in place, was impossible. Attempts at laryngoscopy revealed a grossly edematous and distorted pharynx, tongue and epiglottis. The larynx was not visualized, and attempts at intubation were unsuccessful. Since air exchange was minimal, an emergency tracheostomy was performed. During the next four hours the remainder of the soft tissues of the face and neck became grossly edematous, with the tongue protruding between the teeth. The soft-tissue swelling was treated conservatively and took three weeks to subside. The brain swelling also decreased. The right-sided weakness was gradually alleviated, and the patient was able to eat and talk five weeks after the second operation.

**DISCUSSION**

The venous drainage of the head and neck is ultimately via the internal jugular veins, external jugular veins, and vertebral veins. For such massive symmetrical swelling of the head and neck to have resulted, it is supposed that occlusion of one or more pairs of these major veins occurred. Bilateral internal jugular vein thrombosis was the proposed diagnosis, but venograms were not obtained to substantiate this. That the swelling was not fully manifest immediately at the end of anesthesia could be accounted for by the prolonged hypotension and diminished blood flow that was maintained until the conclusion of the operation.

**REFERENCES**


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**Intra-aortic Balloon Counterpulsation in a High-risk Cardiac Patient Undergoing Emergency Gastrectomy**

**Malcolm G. Miller, M.B., Ch.B.,* and Stephen V. Hall, M.D.†**

General anesthesia and surgery following recent myocardial infarction are associated with high mortality rates, especially in the presence of left ventricular failure and ventricular irritability. The prognosis in this group of patients may be improved by the use of mechanical circulatory assistance during the perioperative period. The following is a case report of such a patient who required emergency gastrectomy 13 days after having suffered an acute myocardial infarct. Circulatory support with an intra-aortic balloon pump† was provided both intraoperatively and in the immediate postoperative period.

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