

DIFFICULT PASSAGE OF THE ENDOTRACHEAL TUBE AND MASSIVE NASAL BLEEDING DURING AWAKE NASAL FIBEROPTIC INTUBATION IN A PATIENT WITH AIRWAY OBSTRUCTION CAUSED BY NECK HEMATOMA

- A Case Report -

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Summary

A 60 yr-old male underwent anterior cervical fusion under general anesthesia. Neck swelling was observed at the next morning. Subsequently, emergent CT scanning was performed, which revealed a retropharyngeal hematoma narrowing the upper airway and right anterior neck hematoma significantly deviating the trachea and larynx. Nasal intubation was attempted but difficult passage of the endotracheal tube counteracted this procedure. Immediately, massive nasal bleeding occurred, which worsened the situation. Subsequently, oral fiberoptic intubation with the aid of McCoy type laryngoscope was tried and intubation was barely established. The patient was submitted to emergent evacuation of the hematoma. Reevaluation of the preoperative CT images showed the nasal cavity narrowing because of widespread nasal mucosal swelling. It is necessary to anticipate that nasal mucosal swelling and bleeding tendency due to impairment of venous drainage can exist in such a case.

Introduction

Awake fiberoptic endotracheal intubation is the current gold standard of management in cases of anticipated difficult intubation¹. It is generally recognized that oral fibreoptic intubation is more difficult to perform than nasal fibreoptic intubation². However, nasal route should be avoided depending on the situation³. We present a case of difficult passage of the endotracheal tube and massive nasal bleeding during nasal fibreoptic intubation after failure of oral fibreoptic intubation, when the patient was suffering from acute airway obstruction due to neck hematoma following anterior cervical fusion.

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Case Presentation

Institutional review board approval and informed consent were exempted because neither ethical problem nor description to identify the patient was included in this case report. A 170 cm, 70 kg, 60 yr-old male with radicular pain in the right upper arm, bilateral hands fine movement disturbance, and gait disturbance as a result of disc prolapse at C5-6 level underwent anterior cervical fusion under general anesthesia. He was smoothly intubated with a common laryngoscope and general anesthesia was maintained with sevoflurane. The surgery took about 4 hours without any significant event. He was extubated immediately after the operation and transferred to the neurosurgical ward for postoperative care. However, neck swelling was observed at the next morning and emergent CT scanning was performed, which revealed that retropharyngeal hematoma narrowing the upper airway (Fig. 1), and the trachea and larynx significantly deviated due to right anterior neck hematoma (Fig. 2). O₂ desaturation with dyspnea was noted. After giving the patient 5 mg diazepam, oral fiberoptic intubation with the aid of laryngoscope was tried several times but failed because of severe swelling of the tongue, retropharyngeal soft tissue and upper airway. Oxygen supply with a face mask was provided to keep the O₂ saturation above 90%. Nasal approach was also attempted but difficult passage of the endotracheal tube counteracted this procedure. Immediately, massive nasal bleeding occurred, which worsened the situation. Again, oral fiberoptic intubation with the aid of McCoy type laryngoscope was tried and intubation was barely established. The patient was submitted to emergent removal of the hematoma. Reevaluation of preoperative CT images showed the nasal cavity narrowing because of widespread nasal mucosal swelling (Fig. 3).

Discussion

The two most common causes of airway obstruction after cervical spine surgery which have been reported are neck hematoma and prevertebral soft tissue swelling⁴⁻⁶. Therefore, this case might have been predictable.

Neck hematoma as seen in figures 2 and 3 seemed to disturb venous drainage from facial and cranial

Fig. 1
Retropharyngeal hematoma was narrowing the upper airway

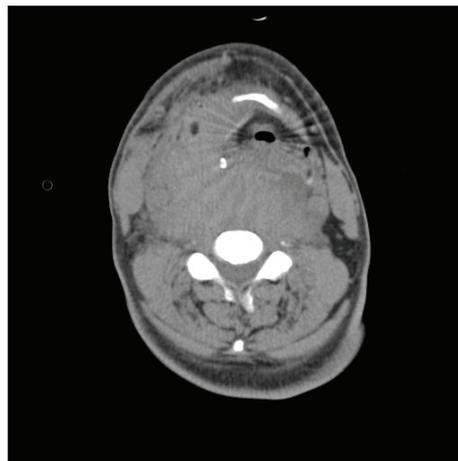


Fig. 2
The trachea and larynx significantly deviated due to right anterior neck haematoma



Fig. 3
The nasal cavity narrowed because of widespread mucosal swelling



circulations. Facial and brain swelling or edema can be observed after bilateral internal jugular vein ligation⁷. As severe swelling of the tongue, retropharyngeal soft tissue and upper airway happened in the present case, it is reasonable to suppose that severe nasal mucosal swelling was induced by the same mechanisms. We attempted nasal intubation because oral fiberoptic intubation is recognized to be more difficult to perform than nasal fiberoptic intubation². However, we should have realized that difficult passage of the endotracheal tube because of mucosal swelling and bleeding tendency due to venous hypertension should exist in such a case.

LMA devices might be worth while to be attempted, however, it might be difficult to obtain inserting space in the oral cavity because of severe swelling of the tongue, retropharyngeal soft tissue and

upper airway. Recently, Shakespeare et al reported that decompression of the airway by opening of the surgical incision may facilitate intubation of the trachea in patients who develop neck hematomas after carotid endarterectomy⁸. In this case, opening of the surgical incision might have improved the situation effectively.

Conclusion

We encountered difficult passage of the endotracheal tube and massive nasal bleeding during nasal fiberoptic intubation in the patient were suffering from acute airway obstruction due to neck hematoma following anterior cervical fusion. We need to know that nasal mucosal swelling and bleeding tendency due to impairment of venous drainage can exist in such a case.

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