

Management Of A Patient With Severe Supra-Glottic Oedema After Thyroid Surgery

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IMPORTANCE Post thyroidectomy respiratory complications are rare but life threatening conditions. They need prompt recognition and early management to avoid catastrophic situation. The reason for respiratory complications are multifactorial ranging from throat oedema to haematoma compressing the airway. This is a case of middle aged man who underwent thyroidectomy for large compressing goitre. He developed stridor after recovery from general anaesthesia and extubation. He required re-intubation, elective ventilation in intensive care unit and tracheostomy on following day due to failure of extubation trial because of severe supra-glottic oedema. Patient was successfully weaned off from mechanical ventilator support later on and discharged home safely.

KEY WORDS Supraglottic Edema, Thyroidectomy, Airway Management

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Review Article

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Post-thyroidectomy respiratory distress is a rare but life threatening condition. Its incidence varies between 0.1% to 1.4%. It may present ten minutes to a week postoperatively, most commonly occurring within 6 hours. Compartment syndrome caused by hematoma below strap muscles can hamper venous and lymphatic drainage leading to laryngopharyngeal oedema¹. Management includes immediate intubation or tracheostomy. Anesthetists face many challenges while intubating due to airway edema and multiples attempts may aggravate this edema and may lead to hypoxia. Assistance by an experienced anesthetist armed with difficult airway equipment and a surgeon skilled in tracheostomy is mandatory.

CASE PRESENTATION

A 55-year-old male patient presented at Shalamar Hospital Lahore, Pakistan for redo thyroid surgery for malignant large goitre causing tracheal compression. Routine pre-anaesthesia assessment and required radiological investigations were done and he was planned for total thyroidectomy. Procedure was conducted under general anaesthesia with endotracheal intubation. Surgery went uneventful and he was extubated fully awake after reversal of muscle relaxants. Immediately after extubation, patient developed inspiratory stridor with increasing amount of blood in the drain. He was intubated immediately by anaesthetic consultant for drainage of neck hematoma and then extubated. However, he developed severe respiratory distress and inspiratory stridor and decreasing oxygen

saturation, requiring re-intubation and mechanical ventilation for 24 hours in intensive care unit. On following day, after detail discussion among anesthetic consultant, intensive care unit consultant and ENT surgeon, patient was brought to operation theatre for extubation with stand by preparation for emergency tracheostomy if required. He was extubated on operating table, and remained well for 30 minutes. He again developed respiratory distress, therefore, it was decided to proceed for tracheostomy for securing airway. Tracheostomy was done under general anaesthesia with laryngeal mask airway to avoid further manipulation of airway. Video-laryngoscopy revealed severe supra-glottic edema which was the reason for his inspiratory stridor. He was shifted back to intensive care unit with tracheostomy tube, remained well and was transferred to ENT ward the very next day and later on discharged to home. His family was kept well informed throughout, all events were documented in patient medical record and hospital administration was also taken into confidence. Patient had an uneventful course after tracheostomy and had no residual complications like recurrent laryngeal nerve injury.

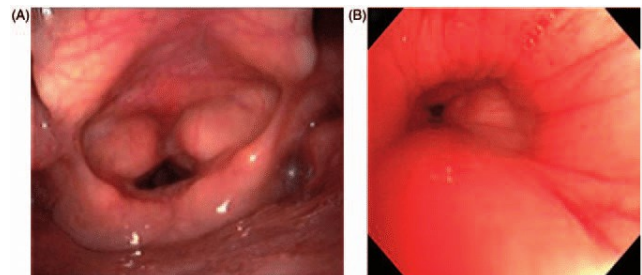


Figure 1. (A view of supra-glottic edema as seen through video-laryngoscope)

DISCUSSION

Airway complications are challenging for anesthesiologists. It requires prompt recognition and timely management to avoid serious complications including hypoxia and brain injury. Standard protocols exist for management of difficult airway both in elective and emergency cases. However, obstructed airway after thyroid surgery could be a very serious complication that at times, could only be managed with surgical airway in the form of tracheostomy. Other complications after thyroid surgery include, neck hematoma, injury to recurrent laryngeal nerve, tracheomalacia, and hypocalcemia². Supra-glottic airway edema again could be multifactorial after thyroid surgery including bleeding, airway instrumentation, in situ endotracheal tube, history of upper respiratory tract infection^{3, 4}. In our case it was probably due to redo surgery and repeated endotracheal intubation. Clinical presentation of patients could vary in case of upper airway obstruction. It can be more serious and sudden onset in pediatric population and more gradual in adult patients. However,

after surgery, it is usually early as there is surgical insult contributing to that. Reintubation with endotracheal tube and mechanical ventilation is usually required in case of severe edema but it takes time for settlement of airway edema to allow for adequate airway patency. These patients may require surgical airway in the form of tracheostomy⁵. Whatever is the case, goal remains to manage the airway to avoid immediate and long term hypoxic complications. This case was efficiently managed initially with drainage of hematoma and overnight mechanical ventilation followed by tracheostomy because of extubation failure.

CONCLUSION

Early detection and immediate intervention remains the principal goal to manage this complication. Tracheostomy is a safe procedure and gives a good alternative to delayed endotracheal extubation in post-thyroidectomy patients with respiratory distress.

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