

# A Case of Subglottic Oedema Causing Upper Airway Obstruction

Lim Nikkie

Emergency and Trauma Department Hospital Kuala Lumpur, Malaysia

## WHAT DEFINED LARYNGEAL OEDEMA?

Laryngeal oedema is defined as abnormal fluid and swelling accumulation in laryngeal mucosa and submucosal tissues. In acute laryngitis, subglottic region of larynx becomes narrow and oedematous, worsen with secretion accumulation lead to airway compromise.

## CASE DESCRIPTION

34 years old female presented 2 days history of chesty cough, fever, with worsening breathlessness. She was drowsy and stridorous.

**Lungs auscultation: Generalised silent air entry**

**ABG under HFM 15L/min: Acute Type II respiratory failure**

**pH 6.98/ PCO<sub>2</sub> 115.5mmHg/ HCO<sub>3</sub> 27.1 mmol/L**

- Intubation was immediately initiated for airway protection.
- Endotracheal tube was unable to pass through a Cormack-Lehane 1 direct laryngeal view due to oedematous vocal cords. (Figure 1 & 2)
- Video laryngoscope, boulgie and supraglottic devices attempted on multidisciplinary teams approach, however still failed to ventilate.
- Patient moved to Operation Theatre for emergency tracheostomy via manual bagging, with Otorhinolaryngology and Anaesthesiology teams both activated for multidisciplinary teams approach.
- Tracheoscopy shown severely oedematous vocal cords up to subglottic region. No mass or subglottic stenosis seen.
- Intra-operatively tracheostomy successful. She was subsequently discharged on double-lumen tracheostomy tube.



**Figure 1 and 2:** Oedematous vocal cords on video laryngoscope, endotracheal tube was unable to pass through

## DISCUSSION

- ✓ The presentation of fever, chesty cough and breathlessness, suggested **that laryngitis as the precipitating factor of sudden life-threatening laryngeal oedema** in this patient.
- ✓ The latest Difficult Airway Society (DAS) guidelines in emergency airway management algorithm stated, **emergency cricothyroidotomy is necessary in the scenario of 'Cannot Intubate, Cannot Oxygenate' (CICO) in a compromised airway**, to cause fewer late complications than tracheostomy.
- ✓ This patient was still able to ventilate via manual bagging, therefore emergency tracheostomy was more feasible as a long-term airway, especially if prolonged ventilation needed.



## CONCLUSION

Multidisciplinary teamwork is important in managing difficult airway with appropriate airway management plans. Anticipating difficult intubation early help preservation of patient's life and prevention of hypoxic brain injury.

## REFERENCES

- 1) Zasso FB, You-Ten KE, Ryu M, Losyeva K, Tanwani J, Siddiqui N. Complications of cricothyroidotomy versus tracheostomy in emergency surgical airway management: a systematic review. BMC Anesthesiology. 2020 Aug 27;20(1).
- 2) Koga Y, Mishima Y, Saho M, Ito A, Ito T, Hiraki T, et al. A case of serious laryngeal edema unpredictably detected during laryngoscopy for orotracheal intubation following induction of anesthesia. Journal of Anesthesia [Internet]. 2011 Apr 28;25(4).