



Difficult Airway in a Patient with Advanced Rheumatological Disease

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Learning Objective

The following case references specific airway considerations in patients with advanced rheumatological conditions including Sjogren’s disease and systemic lupus erythematosus (SLE).

Preoperative Evaluation

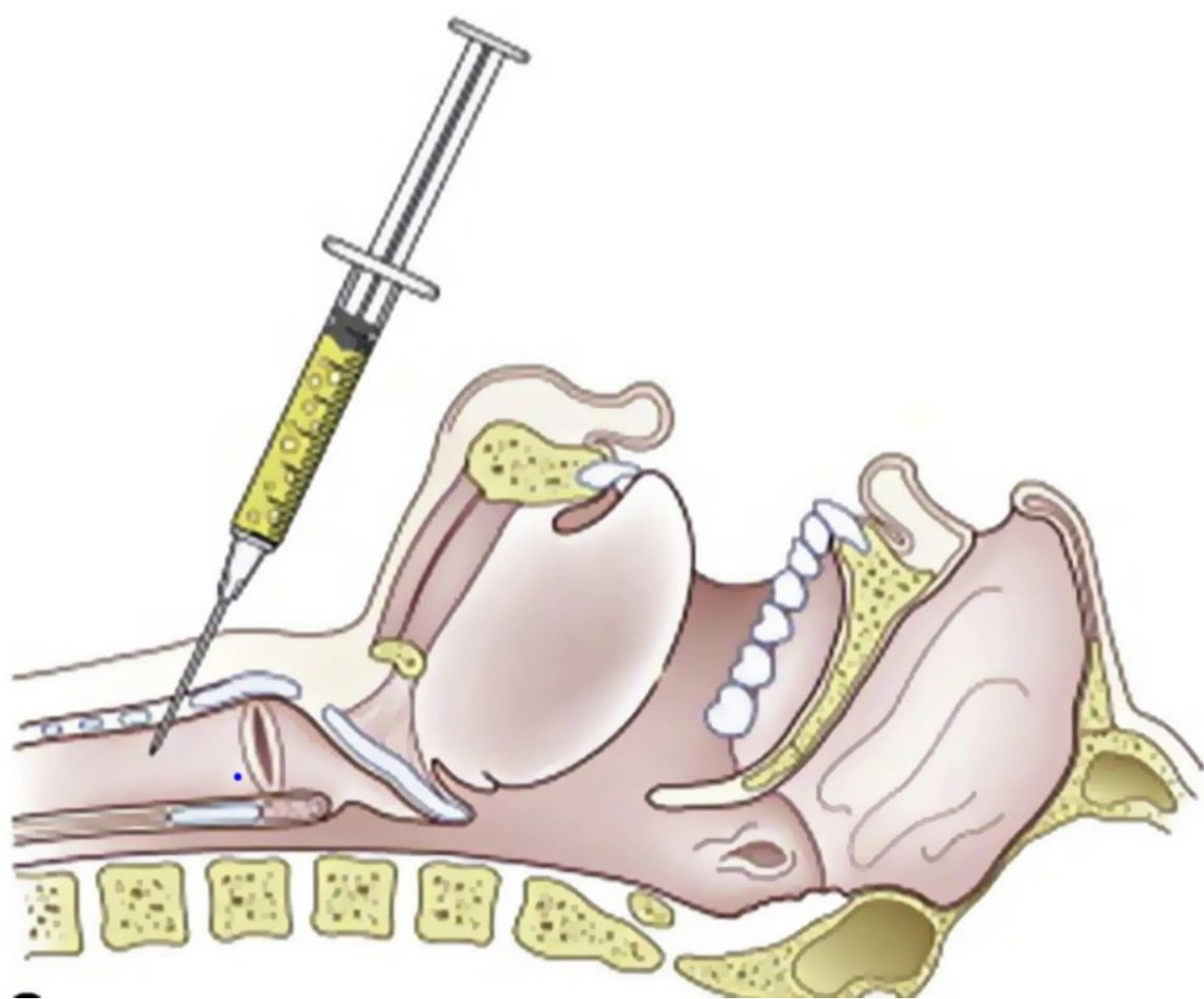
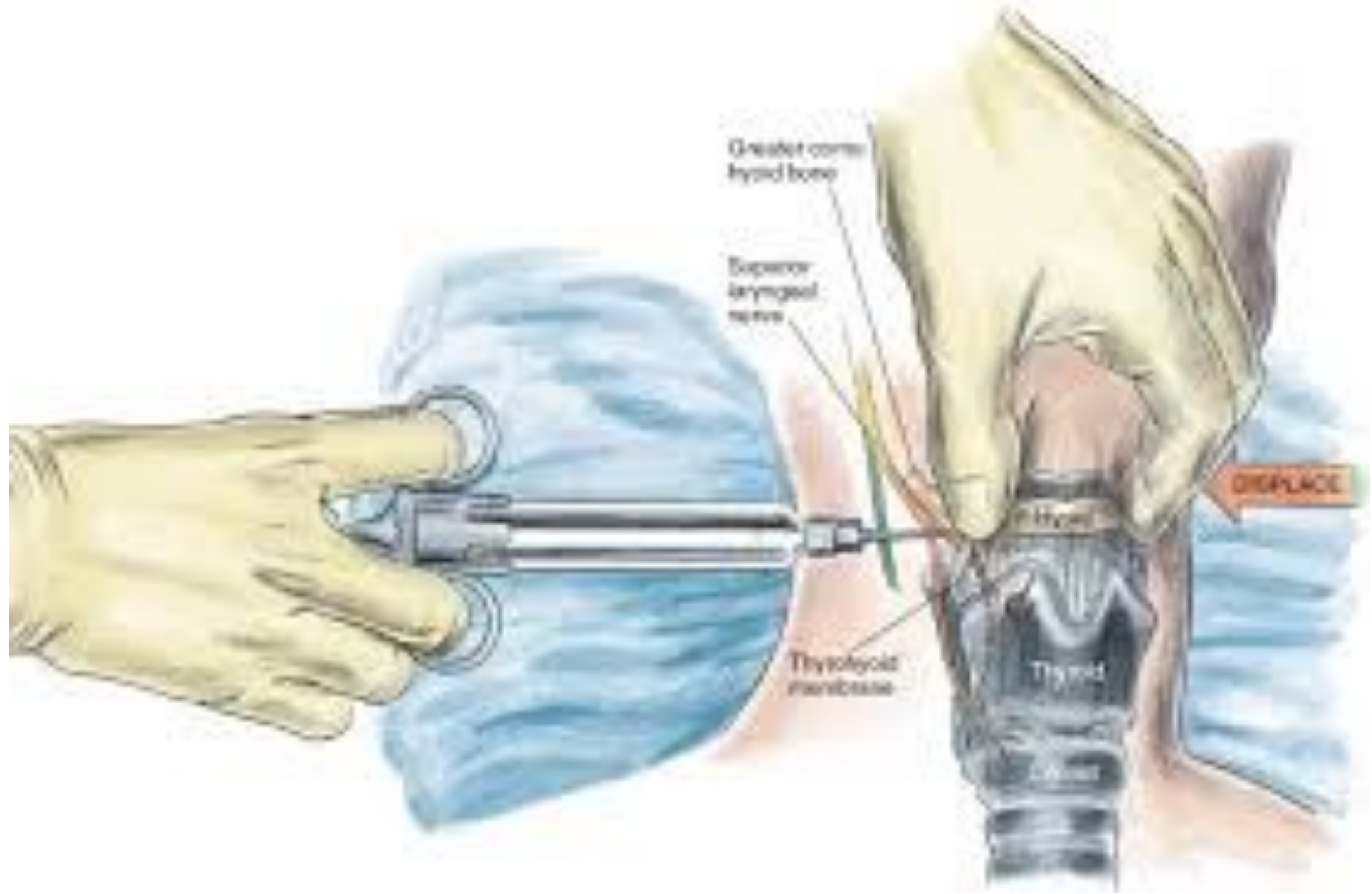
Patient is a 52 year old female with past medical history of hypertension, osteoarthritis, sickle cell trait, hepatitis B, myositis, advanced Sjogren’s disease, and SLE who presented for laparoscopic cholecystectomy. Airway exam was noted to be Mallampati score of 3, with limited mouth opening and tenuous frontal teeth. Plan was to intubate patient via direct laryngoscopy with MAC3 blade and size 7.0 endotracheal tube, with video laryngoscope (C-MAC, D-blade) on standby.

Intraoperative Course

Patient was induced with versed, fentanyl, propofol and rocuronium. When attempting direct laryngoscopy, followed by video laryngoscopy, severely restricted neck extension, reduced jaw mobility, and small mouth opening were noted. Nasal fiberoptic intubation was then attempted, but bronchoscope was unable to be advanced past the base of the tongue. Oral airway was also unable to be placed due to the tenuous status of patient’s front tooth and extremely limited mouth opening. Attempt made at oral fiberoptic intubation with manual manipulation of the tongue was also unsuccessful. Bag mask ventilation with sevoflurane progressively became more difficult, with increasing resistance, raising concern for bronchospasm. Intermittent IV epinephrine boluses resulted in little improvement in bronchospasm. Decision was made to wake up and reverse patient, and perform awake fiberoptic intubation with superior laryngeal nerve and recurrent laryngeal nerve blocks via transtracheal approach. Intubation was successful with no observed complications. Laparoscopic cholecystectomy was successfully performed and patient was extubated to room air.

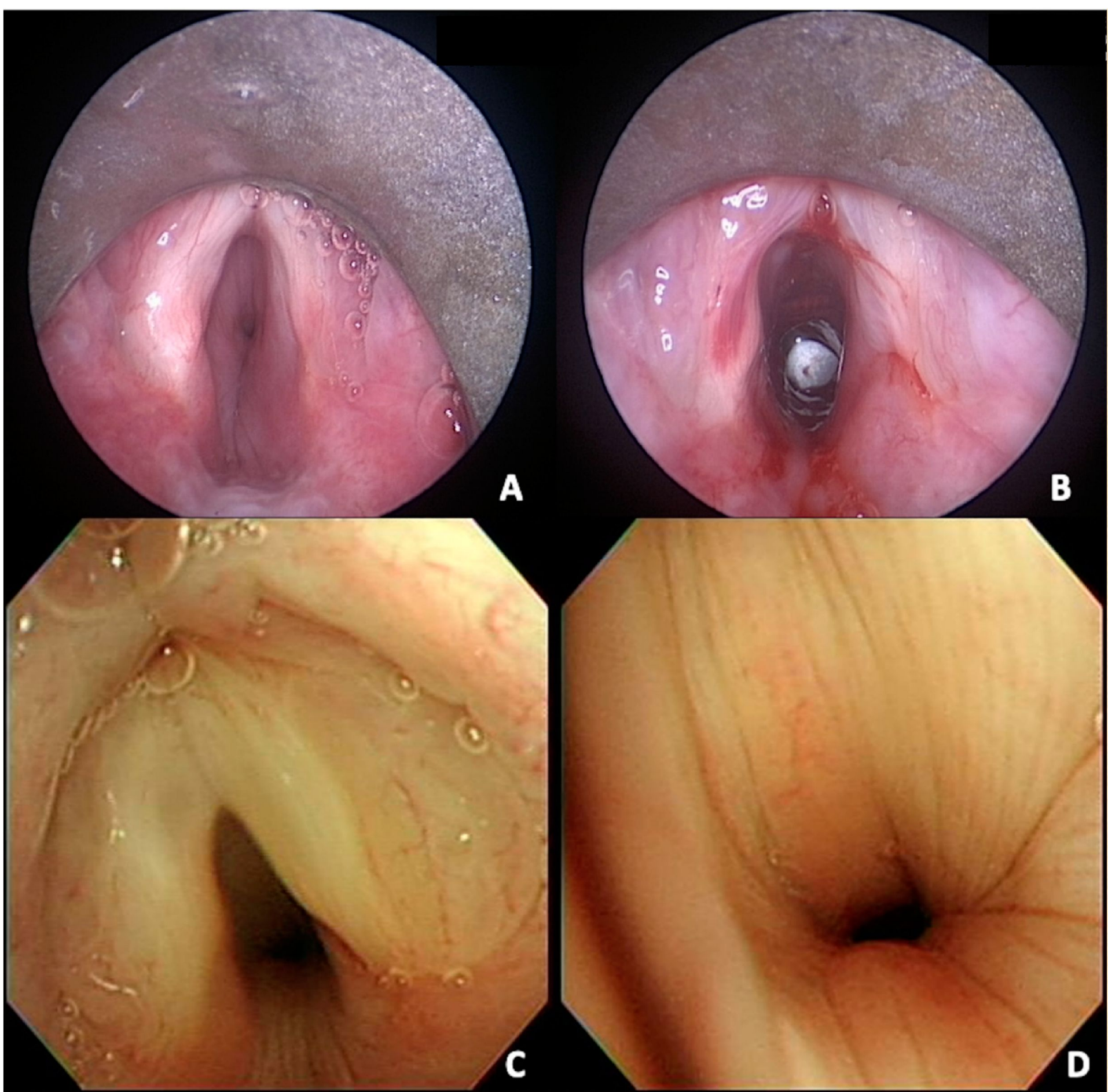
Postoperative Course

Patient remained in PACU with close observation for three hours and was stable on room air. Patient was given initial 10mg Decadron bolus and 4mg doses every 6 hours for 24 hours. Patient was transferred to surgical floor for one-day observation. Patient was subsequently discharged to home the following day.



Discussion

- This case highlights the unique and difficult airway considerations in patients with extensive rheumatological disease and the importance of a thorough airway exam and obtaining a detailed preoperative medical history.
- One to thirty percent of cases of SLE have laryngeal involvement. The symptoms may be caused by mucosal, submucosal, or serosal involvement. In the acute phase of SLE, mucosal ulceration, edema, and submucosal hematomas may cause hoarseness and throat pain.
- Additionally, salivary gland involvement leading to mucosal edema in Sjogren's disease contributes to airway compromise.
- If hoarseness in any capacity is encountered in patients with rheumatological conditions such as RA, fiberoptic nasopharyngoscopy is indicated due cricoarytenoid involvement..
- Noticing these signs on the preoperative evaluation is crucial to optimize the plan for airway management.
- Following the difficult airway algorithm in these patients is crucial to ensure patient safety, while having a low threshold for more invasive airway attempts should they be indicated.



References:

- Bandi, V., Munnur, U., & Braman, S. S. (2002). Airway problems in patients with rheumatologic disorders. *Critical care clinics*, 18(4), 749-765.
- Fombon, F. N., & Thompson, J. P. (2006). Anaesthesia for the adult patient with rheumatoid arthritis. *Continuing Education in Anaesthesia, Critical Care & Pain*, 6(6), 235-239.
- Kuo, I.-C., Hsieh, C.-I., Lee, Y.-C., Hsin, L.-J., Lin, W.-N., & Rutter, M. J. (2024). Diagnostic Challenges and Management of Relapsing Polychondritis with Large-Airway Involvement: A Case Series and Literature Review. *Life*, 14(9), 1194. <https://doi.org/10.3390/life14091194>
- Paolino, G., Ramirez, G. A., Calabrese, C., Moroni, L., Bianchi, V. G., Bozzolo, E. P., Mercuri, S. R., & Dagna, L. (2023). Anifrolumab for Moderate and Severe Muco-Cutaneous Lupus Erythematosus: A Monocentric Experience and Review of the Current Literature. *Biomedicines*, 11(11), 2904. <https://doi.org/10.3390/biomedicines11112904>



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