Stridor due to Crico-Arytenoid Fixation in Severe Reactive Arthritis: A Case Presentation Treated with CO2 Laser via a Laryngofissure

Junaid Aamir¹, Tudor Ionescu², Maha Khan^{2,3}, Yakubu Karagama²

1. University of Manchester (corresponding author Junaidamir@doctors.org.uk) 2. Department of Otolaryngology, Manchester University Foundation Trust 3. Health Education North West

Introduction

- Reactive arthritis is an inflammatory spondyloarthritis (SpA) that occurs following a gastrointestinal or genitourinary infection.^[1]
- Around 18% of patients who suffer from reactive arthritis have been known to progress to a chronic polyarthritis.^[2]
- We present a case of a 51-year-old male suffering from reactive arthritis with otolaryngological manifestations.

Case Report

Patient Presentation

- In January 2018, a 51 year-old male was admitted to hospital due to stridor following a bout of upper respiratory tract infection.

Patient Background

- The patient had a 33-year history of reactive arthritis.
- The arthritis had led to some significant complications and comorbidities leading to progressive diffuse joint stiffness and complex pain.
- Temporomandibular joint (TMJ) stiffness caused trismus of a severity which precluded orotracheal intubation.

Investigations and Management

- Flexible laryngoscopy revealed fixed arytenoids in adductor position.
- The patient underwent an emergency tracheostomy under a general anaesthesia.
- Our plan was to perform a CO2 laser partial arytenoidectomy and endoscopic lateralisation cordopexy.
- Microlaryngoscopy, however, was not possible due to TMJ stiffness.
- An external approach via laryngofissure, therefore, was considered.

Surgical Approach

- A 5cm horizontal incision was performed in front of the thyroid cartilage.
- A 1mm fissure burr was used to cut the thyroid cartilage vertically in the midline.
- A small access above the anterior commissure was established, sufficient enough to insert a 0-degree Hopkins rod, to visualise the entire larynx.
- A hand-held CO2 laser was used to perform a partial left arytenoidectomy.
- One lateralisation suture was placed to further lateralise the left vocal cord to create a wider posterior glottic gap; this suture was removed after 3 weeks to avoid a cheese-wire effect.

Post Operative Period

- Post-operatively, the patient suffered glottic oedema; he was kept as an inpatient and administered steroids regularly.
- Gradually, the swelling decreased and 2 months later he was decannulated.
- His voice following this was only minimally affected and there was no aspiration

Figure 1 (Above) – Laryngofissure

Figure 2 (Above) – Partial Arytenoidectomy and Lateralisation suture

Figure 3 (Above) – Post-Op Follow-up

Discussion

- In our literature search, no case reports were found focusing on laryngeal involvement of patients suffering from reactive arthritis.
- Our focus in the management of this patient was to ensure that the patient's airway was appropriately managed whilst attempting to control the systemic disease.
- From past literature it was clear to see that the use of laryngofissure was in decline even as far back as 1975.^[3]
- Alongside this, we found that there was very little literature regarding the use and efficacy of laryngofissure as a method to obtain access in the event of difficult access through the mouth.

Conclusion

- Cricoarytenoid arthritis (CAA) has been known to be a cause in acute airway obstruction, as seen in this case and others in the literature.
- Currently, the evidence regarding laryngeal involvement of SpA is longstanding but in need of further development.
- Laryngofissure is a key technique, that in the right situations, can be invaluable in obtaining access to a patient's larynx.