

## **RETROPHARYNGEAL ABSCESS: AN AIRWAY CHALLENGE**

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### **ABSTRACT**

Retropharyngeal abscess possesses a great challenge to the anaesthesiologist due to the involvement of airway. Here we present to you a case of unanticipated difficult airway due to the retropharyngeal abscess which in itself was an incidental finding.

A six years old male child of 15 kg, presented with complaints of fever since 5 days and swelling in the right supraclavicular region noticed by the mother since last two days. She gave a history of recent onset of snoring. The neck swelling was diagnosed to be an abscess. The child was posted for incision and drainage of the same on an emergency basis.

On examination Patient was found to be febrile. Pulse rate was 140 beats /min. Oxygen saturation 99 % on room air. A swelling was seen in the right supraclavicular region. We planned to give general anesthesia for the procedure. After giving routine anesthetic agents patient started desaturating and mask ventilation became increasingly difficult. Patient was unable to maintain saturation even after airway maneuvers. Laryngoscopy was done and it was found that the posterior pharyngeal wall was bulging and obscuring almost the entire view of the larynx. A Cormack Lehane grade 3 i.e. only the tip of the

epiglottis was visualized. We failed to intubate after two attempts and thus ventilator support was not achieved.

The pharyngeal bulge was immediately interpreted to be a retropharyngeal abscess and the supraclavicular swelling was in fact a tracking of the retropharyngeal abscess. Promptly an incision was taken on the neck swelling and the abscess drained externally. Following which the pharyngeal bulge collapsed. The larynx was now visualized. Airway was thus secured and 100% saturation achieved. Rest of the Intraoperative and postoperative period was uneventful.

**KEYWORD:**

**Retropharyngeal abscess, unanticipated difficult airway, difficult airway management.**

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**INTRODUCTION:** Retropharyngeal abscess is an infection of one of the deep spaces of the neck. These abscesses are more frequent in children because of the abundance of retropharyngeal lymph nodes [1,2]. Retropharyngeal abscess poses a great challenge to the anaesthesiologist due to the involvement of airway. Here we present to you a case of unanticipated difficult airway due to the retropharyngeal abscess which in itself was an incidental finding.

**CASE REPORT:**

A six years old male child of 15 kg, presented with complaints of fever since five days and swelling in the right supraclavicular region noticed by the mother since last two days. He also gave a history of recent onset of snoring. The neck swelling was diagnosed to be an abscess. The child was thus posted for incision and drainage of the same on an emergency basis. Routine basic investigations were done which were within normal limits except for the raised erythrocyte sedimentation rate and leucocytosis.

On examination patient was found to be febrile. Pulse rate was 140beats/min. Oxygen Saturation was 99 % on room air. A swelling of 3x4cm extending from right sternal head of sternocleidomastoid to the posterior triangle of the neck was seen .The swelling also extended into the suprasternal region . Mouth opening was three fingers. Systemic examination was normal.

General anaesthesia was planned. In the operation theatre, intravenous line was secured with a 22 G cannula and connected to Ringer lactate solution. Heart rate, oxygen saturation, electrocardiogram and respiratory rate were monitored. Patient was premedicated with Inj. atropine 10µg/ kg. Pre-oxygenation was done. Sedation comprising of Inj. Midazolam 0.03mg/kg , Inj. Fentanyl 2µg/ kg and paracetamol suppository 20 mg/kg was given.

Patient was induced with Inj. Propofol 2mg/kg. After confirming mask ventilation Inj. Succinylcholine 2mg/kg was administered. With onset of paralysis, mask ventilation became increasingly difficult. Patient was unable to maintain saturation even after airway maneuvers. Laryngoscopy was done and it was found that the posterior

pharyngeal wall was bulging and obscuring almost the entire view of the larynx .A Cormack lehane grade 3 i.e only the tip of the epiglottis was visualised. We failed to intubate after two attempts and thus a **cannot intubate cannot ventilate situation** arose.



**Laryngoscopic view showing bulging posterior pharyngeal walls(arrows):Fig-1**

The pharyngeal bulge was immediately interpreted to be a retropharyngeal abscess and the supraclavicular swelling was infact a tracking abscess of the retropharyngeal abscess. Meanwhile pulse rate increased upto 150/min and there was decrease in saturation. Promptly an incision was taken on the neck swelling and the abscess drained externally. Following which the pharyngeal bulge collapsed. The larynx was now visualised. Airway was secured with a 5.0 mm cuffed endotracheal tube. Ventilation confirmed and continued with 100% oxygen . Anesthesia was then maintained with inhalational agent Sevoflurane ,oxygen and nitrous oxide [50:50]. Inj. Atracurium 7.5 mg was given. Rest of the intraoperative period was uneventful. Surgery

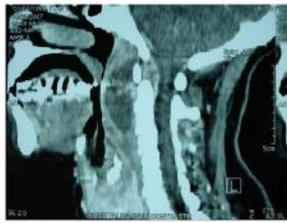
was completed. After the patient's adequate breathing efforts were confirmed, he was reversed with inj. Neostigmine 0.05mg/kg and inj. Glycopyrrolate 8µg/ kg and then extubated.

Postoperatively, the patient was conscious, alert, breathing adequately, maintaining saturation on room air and hemodynamically stable. The patient was then shifted to postoperative recovery ward.

#### **DISCUSSION:**

Retropharyngeal abscess is a collection of pus into the retropharyngeal space which extends from the base of the skull superiorly to the mediastinum inferiorly upto T1 level. Anteriorly it is bounded by posterior pharyngeal wall and posteriorly by the alar fascia. Laterally it is continuous with the parapharyngeal space[ 2].It occurs most commonly in childhood. Male to female ratio is 2: 1[3]. It occurs due to suppuration of retropharyngeal lymphnodes due upper respiratory infection in children. Unlike children, abscess in adults due to nasal or pharyngeal infection are rare and are usually secondary to trauma, foreign bodies, or as a complication of dental infections [4]. The principal symptoms are sore throat, fever, dysphagia, odynophagia, neck pain and dyspnoea. Patients with retropharyngeal abscesses may present signs of airway obstruction, but often they do not. The most common clinical presentation is posterior pharyngeal oedema 37% nuchal rigidity, cervical adenopathy, drooling, and stridor 5. The clinical diagnosis of retropharyngeal abscess can be difficult; the clinical symptoms are variable and nonspecific. The signs of infection may be lacking in certain situations of immune suppression such as diabetes 6

**CT scan(Figure-2)** contributes greatly to the diagnosis, but it has limitations in differentiating abscess from cellulitis of the retropharyngeal space abscess from cellulitis of the retropharyngeal space.



**(Figure-2)[Ref-12]**

Comment [U1]:

The **plain radiograph (Figure-3)** in lateral view is very specific when it shows air in the retropharyngeal space.



**(Figure-3)[Ref-12]**

Carrying out radiological examinations should not delay care 7 and any suspect Retropharyngeal abscess should be prescribed antibiotics (which can be altered later). Drainage of the abscess with broad spectrum antibiotics is the treatment of choice.

3,9 Intraoral drainage is preferred if the abscess is confined above the level of hyoid bone. If it extends below it should be drained externally 3

Its anaesthetic implications are as follows. The patient is often dehydrated that results in electrolyte and metabolic derangements due to poor oral intake. 10 .The patient may be septicaemic. If the presentation is delayed there may be other complications like empyema or mediastinitis 9Difficulty in the airway management is a concern.

Endotracheal intubation is a challenge due to decreased mouth opening, oedema and distorted airway. In early stages of anesthesia; the trismus reduces but later on anesthesia may precipitate a cannot ventilate cannot intubate situation 11 .So to avoid such situation,patients presenting with neck swelling should be evaluated properly and there should be high clinical suspicion regarding there intrapharyngeal extension.The vocal cords may be difficult to visualise due to swollen pharyngeal wall, airway oedema and laryngeal displacement 9 Another concern is rupture of the abscess and aspiration of the contents during laryngoscopy and intubation, which should be gentle to prevent this. Thorough throat packing should be done if uncuffed endotracheal tube is used [9].

Extubation should be done after the patient is awake and has gained complete airway reflexes

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