Case Report

Retropharyngeal Abscess in Child — Dilemma in Airway Management

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Abstract

Retropharyngeal abscesses in pediatric is becoming increasingly rare with the availability and advancement of broad spectrum antibiotics in recent years. It is a life-threatening emergency condition because it can lead to airway compromise and induce other catastrophic complications. We report a child with supraglottitis which was then complicated with an extensive retropharyngeal abscess.

INTRODUCTION

Retropharyngeal abscess is a deep neck space infection that usually affects mostly young children [1]. It is an abscess which involves space that extends from base of skull to the mediastinum at the level of first and second thoracic vertebrae, anteriorly bordered by buccopharyngeal fascia, laterally by carotid sheath and posteriorly by deep cervical fascia draining upper aero digestive tract. Retropharyngeal abscess incidence is declining because of the common use of antibiotic and improvement in medical care for which commonly caused by upper respiratory infection, commonly Staphylococcus Aureus and Group A Streptococcus [2,3]. Predominantly male (2:1) with seventy percent of the patients are younger than six years of age [4].

CASE PRESENTATION

A fifteen months old previously healthy girl presented with one week history of upper respiratory tract infection and later developed supraglottitis. She was electively intubated and responded well with intravenous Ceftriaxone. She was discharged well after completion of seven days of antibiotic. Unfortunately two days later, she developed noisy breathing and reduced oral intake. On examination, there were audible stertor and child was mildly tachypnoeic with stable vital signs. There was no obvious neck swelling seen or palpable on inspection and neck palpation respectively. Fiber optic examination showed right retropharyngeal bulge extending from the level of nasopharynx to the tip of epiglottis. She was breathing with good oxygen saturation even though the laryngeal inlet could not be visualized at all due to the retropharyngeal bulge.

Immediate CT scan was done, showing a large rim enhancing retropharyngeal collection, extending from the base of skull until C7 vertebral body measuring 2x4.6x5.2cm (Figure 1) with multiple enlarged cervical lymph nodes. The airway appears narrowed at the supraglottic region at the level of hyoid bone (Figure 2).

Patient was planned for immediate incision and drainage in view of impending airway compromised. Intubation was successful with single attempt without rupturing the abscess. Intraoral incision was made at the most bulging part of the posterior pharyngeal wall, and drained about ten milliliters of pus. Post operatively was uneventful.

She was kept intubated for three days to secure the airway while awaiting the supraglottic edema to subside. The culture did not show any growth. Patient was discharged well after completing seven days of intravenous Tazocin and Clindamycin.

Figure 1 This is the contrast enhanced CT scan sagittal view of the patient showing extensive retropharyngeal abscess, occluding the airway.
DISCUSSION

Retropharyngeal abscess is a potentially life threatening deep neck abscess disease. The initial presenting symptoms, especially in children are usually nonspecific. It includes neck pain (38%), fever (17%), sore throat (17%) and poor oral intake [5]. Only five percent retropharyngeal abscess patient presented with stridor [5]. The number of reported cases is increasing in various centres [6]. This rise is probably due to early detection of the disease because of improved access to investigation tools [7]. Most of the cases can easily being unnoticed and worsened due to high variation of presentation of the disease. Therefore, high suspicious of the possible retropharyngeal abscess should always be ruled out in any of the patients with the above presenting symptoms.

The most likely cause of the abscess in this patient is probably supraglottitis complicated with retropharyngeal supplicative lymphadenitis. It has been postulated that younger children are more likely to develop infections in this area because of the presence of lymph nodes that run in a paramedian chain in the retropharyngeal space and will spontaneously regress after five years [7].

CT scan is considered to be the imaging of choice in diagnosing retropharyngeal abscess. It is highly sensitive in diagnosing an abscess (92%) even though it is not specific [8]. Surgical intervention is recommended in patients who has positive CT scan finding. In this patient, surgical drainage was indicated in view of the abscess collection has already worsened as shown in the CT scan and might soon compromise the upper airway completely due to inability to see a normal laryngeal inlet during awake fibreoptic nasopharyngolaryngos copy.

Treating a retropharyngeal abscess, especially in children is challenging. Mortality was reported as high as 6.7 to 15 percent in younger age group before the wide usage of broad spectrum antibiotic [9]. In early abscess, some patient may respond well with intravenous antibiotic alone [10]. However, sole intravenous antibiotic treatment for retropharyngeal abscess might slow down patient’s recovery compare to surgical intervention [4]. Apart from having a greater risk of compromised airway, the abscess might even ruptured spontaneously causing potentially fatal event [4].

In this patient, securing an airway before surgery was in the dilemma. Oral intubation may either fail or it may rupture the abscess causing aspiration to the lung as the airway is likely to be distorted with edema and laryngeal displacement [11]. Tracheostomy in pediatric under gas inhalation or local anesthesia is not a worthy option to be considered, furthermore with the probable associate complication and post operative care. Hence, a good communication with an anesthetist is important for the patient’s best outcome which varies from patient to patient.

The child was able to lie down supine without any sign of airway obstruction or respiratory depression overnight. Therefore, a trial of oral intubation by the anesthetic team in operation theatre was decided with otolaryngology team stand by as anticipating difficult airway and potential emergency tracheostomy for acute airway obstruction. The patient was induced with inhalational gas without muscle relaxant and allowed for spontaneous breathing. Good tidal volume and chest expansion was observed. Lower head down position was ordered to prevent any pus aspiration into the larynx in case the abscess is ruptured during manipulation of intubation [11]. Finally, the child was successfully intubated with a single attempt without any difficulty and morbidity. Intraoral incision and drainage of the abscess was uneventful.

CONCLUSIONS

Management of retropharyngeal abscess in children is challenging, especially when planning to secure the airway preoperatively. Thus, early detection of the disease with a good collaboration from a multidiscipline department is essential in preventing any morbidity or mortality from a life threatening acute upper airway disease.

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