

# A Retropharyngeal Abscess: With Massive Mediastinal Extension

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## ABSTRACT

**A case of 13-year old male child with huge retropharyngeal abscess extending to mediastinum is reported. Anatomical location of this abscess makes it a life threatening condition requiring prompt diagnosis and treatment thus preventing morbidity and mortality. The abscess was drained externally through neck. Antibiotics were administered pre and postoperatively. The child recovered without any residual complication.**

**Keywords: Retropharyngeal abscess, mediastinum, life threatening.**

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## INTRODUCTION

Retropharyngeal abscess (RPA) is a rare deep neck infection that usually affects young children, however, it is the most common deep neck infection in children.<sup>1,2</sup> Deep neck infections have been recognized and described since the time of Galen in the second century AD.<sup>3</sup>

The retropharyngeal space extends from the base of the skull to the mediastinum at the level of the first or second thoracic vertebrae. It is limited anteriorly by the buccopharyngeal fascia, laterally by the carotid sheath, and posteriorly by the alar fascia of the deep cervical fascia.<sup>4</sup>

In children the abscess formation usually follows an upper respiratory tract infection with suppuration of the retropharyngeal lymph nodes. These lymph nodes usually atrophy by 3 to 4 years of age.<sup>5</sup> Adults presenting with this infection often have a history of a foreign body ingestion, external trauma, or instrumentation, such as intubation or esophagoscopy.<sup>6</sup> This should also raise the suspicion of an underlying illness, such as diabetes, immunodeficiency, malignancy, chronic alcoholism, or tuberculosis of the cervical spine.<sup>4</sup>

This case report details a thirteen year old teenage boy with a massive retropharyngeal abscess having large mediastinal extension.

## CASE REPORT

A 13-yr old male child presented with 15 day history of progressive dysphagia, pain throat and intermittent low grade fever. There was no history of trauma or any foreign body ingestion. At the time of presentation patient had stridor. Throat examination revealed anterior bulging of posterior pharyngeal wall, lower extent of the bulge could not be visualized. Plain soft tissue neck radiograph revealed prevertebral space widening which was impinging on the airway. Blood analysis revealed a high degree of inflammatory reaction. A CECT neck with thorax was done which revealed well defined peripherally enhancing cystic lesion measuring 3×7×20 cm noted in the retropharyngeal space extending from nasopharynx to mediastinum upto the level of 6<sup>th</sup> thoracic vertebrae. (Fig 1)

Due to the extent of the abscess it was decided to drain the abscess externally under ultrasound guidance. The patient was first fiberoptically intubated by the anaesthetist, taking care not to impinge the tube over the bulge caused by the abscess. Then the patient's head was rotated towards the left side and ultrasonographically the site for drainage was located on the right lateral side of neck and a horizontal incision was given, blunt dissection was carried out, the abscess cavity was opened and all the pus was suctioned out, the cavity was repeatedly flushed with antibiotic solution and betadine. Approximately 70ml of foul smelling, straw coloured pus was drained. A negative suction drain was left in place, which was later removed at the 10<sup>th</sup> postoperative day. Pus was sent for culture and it came out to be sterile.

This might have happened as the patient was already on intravenous antibiotics (ceftriaxone and vancomycin) for approximately 5days before being operated. Patient was continued on intravenous antibiotics (ceftriaxone and metronidazole) postoperatively for approximately 15-20days. Steroids (i/v hydrocortisone) were also given postoperatively to relieve any edema in the respiratory tract for approximately 10days. Patient improved symptomatically. Post-op CECT done after 10days of surgery revealed complete resolution of the abscess and a normal scan. (Fig 2)



**Fig 1. Preoperative CT Picture- Showing mediastinal extent of the abscess.**



**Fig 2. Postoperative CT scan – showing total resolution of the retropharyngeal abscess.**

### DISCUSSION

The retropharyngeal space is a potential space in the fascial plane between the prevertebral fascia and the pharyngeal constrictor muscles. In adults, an acute nontuberculous retropharyngeal abscess mostly develops as a result of trauma to the pharynx and the oesophagus, either by a foreign body or endoscopy. However, it may rarely develop following dental infections or pyogenic osteomyelitis of cervical spine.<sup>6</sup> A recent study holds upper respiratory tract infections as the most common aetiological predisposing factor responsible for retropharyngeal abscess in adults also, presumably due to spread of infection to a persistent retropharyngeal node as in children.<sup>7</sup> The usual clinical features of acute retropharyngeal abscess include sore throat, dysphagia, fever and midline pharyngeal swelling. In more severe cases external neck swelling or neck rigidity may be present. Sometimes hoarseness, stridor and respiratory obstruction may also develop either due to anterior displacement of posterior pharyngeal wall by the abscess or secondary laryngeal oedema, as was also observed in the present case.<sup>8</sup>

Microbiology of non-tuberculous retropharyngeal abscesses often reveals mixed isolates involving both aerobic and anaerobic bacteria.<sup>9,10</sup> Predominant causative aerobes are Streptococci, Staphylococcus aureus and Klebsiella, while predominant anaerobes are Bacteroides and Peptostreptococcus species.<sup>10</sup> Radiograph of the neck in lateral position during deep inspiration with neck fully extended is the most valuable tool in the diagnosis of retropharyngeal abscess. Classical radiological changes suggesting pathology in the retropharyngeal space include increased thickness of the prevertebral soft tissues, air or air fluid level in the soft tissue and loss or reversal of the cervical spine curvature. CT scan is very useful for the early diagnosis of mediastinitis and for the follow-up.<sup>11</sup>

Retropharyngeal space communicates inferiorly with the mediastinum making spread of infection possible. Due to the enzymatic action of organisms, pleura may get invaded secondarily leading to the development of pyopneumothorax or empyema.<sup>12</sup> The high mortality rate associated with retropharyngeal abscesses is due to its association with airway obstruction, mediastinitis, aspiration pneumonia, epidural abscess, jugular venous thrombosis, necrotizing fasciitis, sepsis, and erosion into the carotid artery.<sup>13</sup>

### CONCLUSION

Retropharyngeal abscess is rare in adults and is a very serious emergency. The diagnosis is based on the clinical and radiological pictures, and comorbidities should be ruled out and managed simultaneously. However, early management with antibiotics and surgical drainage have very good prognosis.

### REFERENCES

- [1] Tan PT, Chang LY, Huang YC, Chiu CH, Wang CR, Lin TY. Deep neck infections in children. *J Microbiol Immunol Infect* 2001;34:287-92.
- [2] Choi SS, Vezina LG, Grundfast KM. Relative incidence and alternative approaches for surgical drainage of different types of deep neck abscesses in children. *Arch Otolaryngol Head Neck Surg* 1997;123:1271-5.
- [3] Frank I. Retropharyngeal abscess. *JAMA* 1921; **77** : 517-22.
- [4] Al-Sabah B, Salleen HB, Hagr A, Choi-Rosen J, Manoukian JJ, Tewfik TL. Retropharyngeal Abscess in Children: A 10 year study. *J Otolaryngol* 2004;33:352-5.
- [5] Millan SB, Cumming WA. Supraglottic airway infections. *Prim Care* 1996;23:741-58
- [6] Goldenberg D, Golz A, Joachims Z. Retropharyngeal abscess: a clinical review. *J Laryngol Otol* 1997;111:546-50.
- [7] Pickles JM. Retropharyngeal abscess complicating a neck wound : A case report. *J Laryngol Otol* 1988;102:552-3.
- [8] Singh I, Chanda R, Gupta KB, Yadav SPS. Fatal Pyothorax : A Rare Complication of Retropharyngeal Abscess. *Indian J Chest Dis Allied Sci* 2003;45:265-8.
- [9] Brook I. Microbiology of retropharyngeal abscess in children. *Am J Dis Child* 1987;141;202-4.
- [10] Gidley PW, Ghorayeb BY, Stiernberg CM. Contemporary management of deep neck space infections. *Otolaryngol Head Neck Surg* 1997;116:16-22.
- [11] Barratt GE, Koopmann CF, Coulthard SW. Retropharyngeal abscess : A ten-year experience. *Laryngoscope* 1984;94:455-63.
- [12] Kruyt PM, Boonstra A, Fockens P, Reeders JW, Van Lanschot JJ. Mediastinitis causing pleuroesophageal fistula: Successful treatment by combined transcervical and pleural drainage. *Chest* 1996;109:1404-7.
- [13] Herzon FS, Martin AD. Medical and surgical treatment of peritonsillar, retropharyngeal and parapharyngeal abscesses. *Curr Infect Dis Rep.* 2006;8:196-202.