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**Case Report**

# Bimodal video laryngoscope assisted management of retropharyngeal abscess: a case report

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## ABSTRACT

A retropharyngeal abscess is a suppurative collection of the deep spaces of the neck. Mostly at presentation they are massive and are a dilemma for the surgeon and the anesthetist alike, vying for space, one for therapeutic intervention and the other for airway access. Video laryngoscopic assisted evacuation of such a collection, adopting the nasopharyngeal and the transoral route was undertaken in a middle aged individual which is being reported.

**Keywords:** Retropharyngeal abscess, Video laryngoscope

## INTRODUCTION

The retropharyngeal space is located behind the pharynx between the buccopharyngeal and the prevertebral fascia extending from the skull base to the tracheal bifurcation. Retropharyngeal abscesses have a potential for airway compromise and other catastrophic complications due to communication with the parapharyngeal spaces and mediastinum. In the presence of such a difficult airway situation, the use of a video laryngoscope results in a higher success rate of intubation compared with direct laryngoscopy.[1-3]

## CASE REPORT

A 46 year old stout gentleman presented with progressive dysphagia for the last 3 weeks from solids to semisolids. There was an antecedent history of chicken piece impaction, which got ejected following a bout of vomiting the next day. There was uneasiness experienced in the posterior part of the throat, which gradually became worse with accompanying difficulty in swallowing; initially for solids and later for semisolids. In the due course till presentation that is after approximately three weeks no change in voice was noticed, neither by him nor his close associates. There was low grade fever with malaise.

On examination the neck did not exhibit any erythema, swelling, tenderness nor change in local temperature, though some stiffness on extension and flexion of neck was noticed. A marked bulge of the posterior pharyngeal wall with air pockets, extending from C2 to C7 vertebrae was noticed on plain X-ray soft tissue neck lateral view as in Figure 1a. Contrast barium swallow study showed a smooth oesophageal wall in its entire length as given in Figure 2a. Computed tomography, axial cuts corroborated the plain and contrast study findings as presented in Figure 2b. Additional information about the localization of the collection to only the posterior - pharyngeal space was assimilated from the latter imaging modality. The oropharyngo-laryngo-tracheal air shadow, was well demarcated, in all the three imaging work up, though the arytenoid mucosa was slightly thickened. Outpatient telescopic 70 degree laryngocopic assessment could not visualize the glottic chink, as the prominent posterior pharyngeal wall was in juxtaposition to the epiglottis. The laryngeal inlet was not visualized even on anterior traction on the median glosso-epiglottic ligament.

Radiography chest and cardiac evaluation was within normal parameters. With routine consent and special consent, for tracheostomy he was taken up operative intervention. Positioned supine, the intubating video laryngoscope was used to align the oral-oropharyngeal and the laryngeal axis to visualize the laryngeal inlet and the bulge on the post pharyngeal wall (Figure 3). Care was taken while manipulating the tip of the scope, lest the swelling might burst with consequent aspiration. An endotracheal suction cannula was cannulated into the oropharynx, through the nasopharynx via the left nostril. This was advanced under video visualization into a tunnel made in the superior border of the bulge, with a right angled "Negus" forceps, thereby decompressing the swelling, permitting visualization of the glottic chink, and facilitating laryngo tracheal intubation. With proper airway control a wider opening of the initial incision released suppurative content lying under tension. A nasogastric tube no 16 was inserted to maintain his nutritional status.

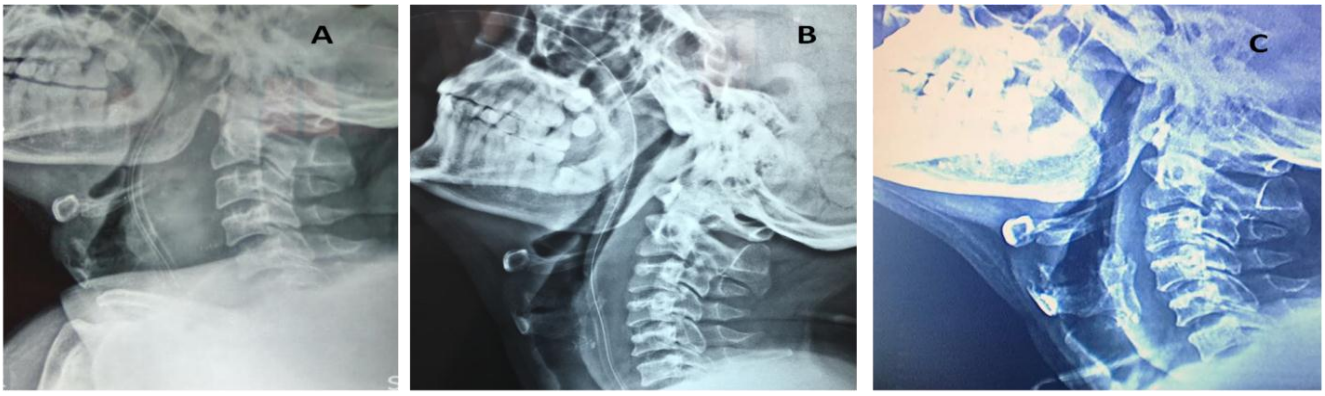


**Figure 1: A) Preoperative bulge seen in the prevertebral area; B, C) Gradually regressing bulge post drainage of the abscess.**

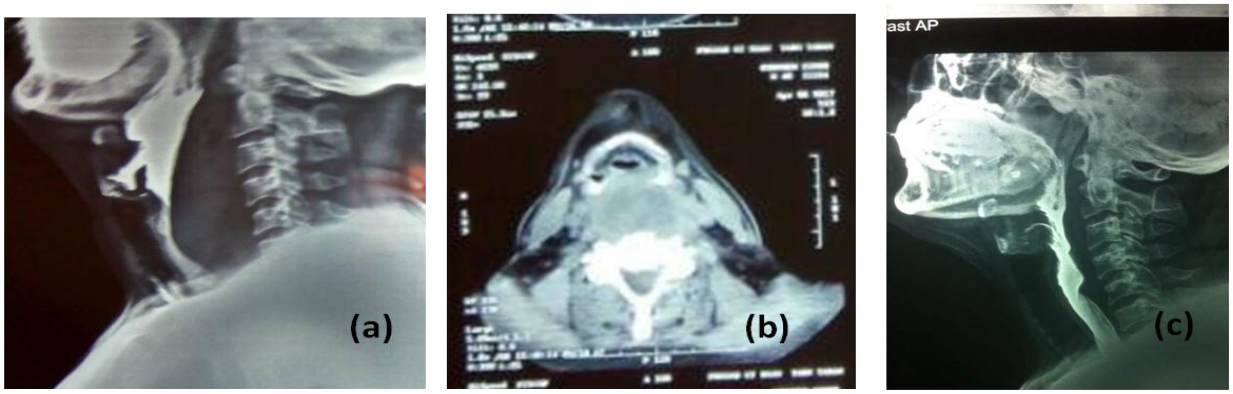


**Figure 2: a) Barium swallows showing smooth esophageal wall; b) CT neck showing collection in retropharyngeal space; c) Postoperative barium swallow showing normal esophageal lining.**


**Figure 3: A) Intubating video laryngoscope; B) Bulge visualized on the posterior pharyngeal wall; C) Pus being drained out.**

Postoperative status was uneventful with check-up radiographs showing regression of the anterior posterior width of the soft prevertebral shadow as shown in Figure 1b and 1c and barium swallow also showed normal esophageal lining as depicted in Figure 2c.

## DISCUSSION

Abscess of the retropharyngeal space are rare in adults. It can occur as a result of local trauma, such as foreign body ingestion, tuberculosis or procedures like bronchoscopy and esophagoscopy. Patient usually presents with sore throat or difficulty swallowing out of proportion to the pharyngeal findings in clinical examination. It is associated with a high morbidity due to chances of airway obstruction, mediastinitis, aspiration pneumonia, sepsis etc.[2,5]

The retropharyngeal abscess may suddenly burst with a likelihood of spillage in the larynx and consequent aspiration, more so during endotracheal tip trauma during attempted intubation under general anaesthesia or in an apprehensive patient under local anaesthesia. The sitting position and local anaesthesia is conventionally advised to deal with such abscesses. But with the advent of the intubating video laryngoscopes with a curved blade, the entire laryngeal inlet can be delineated and the swelling decompressied via an alternate route, i.e. the nasopharynx, that does not elicit a gag reflex, with risk of rupture of abscess. Video laryngoscopes provides a better view of the glottis in cases of difficult airways because the camera eye is within a few centimetres from the glottis, and also it is not necessary to align the oral, pharyngeal, and laryngeal axes to see the glottis directly from the outside of the patient's mouth. Also the glottis can be visualized indirectly on the screen thus providing better vision under magnification.[3,4]

Tracheostomy under local anaesthesia may be sometime time consuming like in this case, in view of a bulky thyroid and an impalpable suprasternal trachea and also with the likelihood of patient struggling with spontaneous rupture possible.

## CONCLUSION

Bimodal-oro-oropharyngeal and nasopharyngeal routes can be utilized to initially decompress and then drain a massive retropharyngeal abscess. Intubation video laryngoscope is an ideal instrument for these oro-pharyngeal procedures as there is better visualization of the laryngopharynx and the laryngeal inlet on the bedside monitor.

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