Sudden rupture of an acute retropharyngeal abscess in children: A grave lesson

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Abstract Retropharyngeal abscess (RPA) in children is becoming an uncommon entity in the era of antibiotics. Majority of the patients presented with neck swelling and fever while very few of them manifested any kind of airway compromise symptoms. Nevertheless, RPA can potentially be life threatening as the possible complications such as airway obstruction and sudden rupture of the abscess may occur if not treated promptly. There was no reported mortality in recent literatures. We reported an unfortunate boy who died from sudden rupture of the RPA.

1. Introduction
Retropharyngeal abscess (RPA) in children carries a significant risk of morbidity and mortality such as sepsis, airway obstruction and carotid artery aneurysm. The commonest features upon presentation are neck swelling and fever while respiratory distress is rare. As the symptoms are directly proportionate with the volume of abscess, patients may progress rapidly into respiratory distress if not detected early. The clinical symptoms and lateral neck X-rays were sufficient to diagnose RPA, while the contrast-enhanced CT may be a useful tool in the diagnosis. Once diagnosed, it is prompted for immediate security of the airway and emergency drainage as impending compromised of the airway may prove to be fatal. We reported here a case of sudden rupture of RPA that caused mortality.

2. Case report
A 9-year-old boy presented with progressive painful left neck swelling and fever for a 3 day duration. It was associated with trismus and reduced oral intake. There was no preceding history of sore throat, runny nose or breathing difficulty noted. On general inspection, he appeared fairly lethargic and febrile, nevertheless, he was neither stridulous nor in respiratory distress. His blood pressure and oxygen saturation were within the normal range. Throat examination showed bilateral tonsils...
Deep neck spaces are the potential spaces bounded by the layers formed by cervical fascia. They are named according to their anatomical location such as parapharyngeal space, retropharyngeal space, peritonsillar space, etc. Infections involving any one of these spaces may spread into another space because of the close proximity nature of these spaces.

In children, RPA is a less common type of deep neck infection after parapharyngeal and submandibular abscesses. The incidence is however shown to be increasing in trend in some centers in the USA. Gender wise the boys were predominantly involved (63%), while the peak incidence occurred before the age of 3 (42%) followed by the group of age 4–11 (28%). This age distribution can be contributed to the fact that in children below 5 years of age, the presence of paramedian group of lymph nodes which provide a common drainage pathway from nasopharynx, oropharynx, nose, paranasal sinuses, adenoids and tonsils may become the source of infection as the formation of abscess was mainly due to the suppuration of these lymph nodes. They commonly involved by the age of 5. It is supported by the studies which showed that the commonest antecedent factors were upper respiratory tract infection (eg; rhinosinusitis (30%), tonsillitis (17%)) while ingestion of foreign body or pharyngeal trauma (25%) also have been reported.

The symptoms upon presentation were variable. Grisaru-Soen et al. reported among 39 patients they studied, the commonest triad of symptoms at presentation were fever, neck pain and dysphagia while only 2 patients (5%) manifested stridor. Other study by Nazir et al. reported only 6 of the 40 patient had stridor while Laughlin et al. reported 29% of the patients studied presented with respiratory compromise. These studies showed that signs of airway compromise are uncommon for RPA at presentation in some cases. The security of the airway is important and endotracheal intubation is indicated if the airway obstruction is severe. In this case, we did not electively secure the airway at the time of presentation as it was not indicated.

As the potentially fatal outcome is waiting, the fast and accurate diagnosis is precious. The lateral soft tissue neck X-ray is a simple yet useful screening tool in the diagnosis of RPA with the 80% sensitivity. Criteria to suggest an RPA include thickening of the prevertebral soft tissue of more than 50% from the width of any cervical vertebral body, the loss of normal cervical lordosis and the presence of gas or fluid level in the prevertebral shadow. Two of the features described were evidently seen in this patient lateral neck X-ray (Fig. 1). While CT scan proved to be the imaging of choice with up to 92% sensitivity, in some centers, it may not be readily available at the time of presentation which was the reason for us to decide against doing it as it may delay the surgical intervention. The surgical drainage is the recommended treatment in RPA when there is evidence of compromised airway while empirical antibiotic of broad spectrum should be started promptly.

There was no reported mortality owing to the RPA as proved by recent literatures. Nevertheless, as far as our case is concerned, it is still proved to be a highly challenging effort to manage children with RPA even without the evidence of airway compromise as the fatal outcome may still be very much of a possibility. While we did manage to establish the diagnosis early and the patient was in the process of going to the operation theater, the sudden rupture of the abscess left us without a chance to safe the life of this very unfortunate boy.

4. Conclusion

The RPA in children even without the evidence of respiratory compromise still carries the high possibility of mortality, as has
been highlighted by this case, that nothing should be taken for
granted. Any children who presented with neck swelling that
points toward RPA should be dealt with great care to avoid
the unwanted sequelae.

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