UNUSUAL CAUSE OF LUNG COLLAPSE - RHINOSPORIDIOSIS

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Abstract: BACKGROUND Rhinosporidiosis is a granulomatous infection most commonly affecting the nasal mucosa and conjunctiva. Tracheo-bronchial involvement is extremely rare and is potentially life threatening. The disease is endemic in India and Sri Lanka. We report a rare case of lung collapse following tracheobronchial Rhinosporidiosis with co-existing nasal, nasopharyngeal and oropharyngeal lesions. These kind of cases may pose a challenge to radiologists while interpreting findings if not thought of. CASE 50 year old man, with cutaneous manifestations, history of recurrent polypectomy and progressive dyspnea with tracheostomy tube in situ. The patient’s airway was secured after removing fleshy mass of Rhinosporidiosis in operation theatre and imaging was done to reveal the extent of the lesion. CT imaging of chest plain and contrast revealed left upper lobe collapse with loculated pneumothorax. CT PNS showed soft tissue mass occluding the nasal cavities, nasopharynx and maxillary antrum. CT neck showed soft tissue mass in sub glottis and upper trachea. 5 months follow up imaging after surgical and medical management with Dapsone 100mg bd showed complete resolution of the lung collapse with residual masses in the nasal cavity, maxillary antrum, nasopharynx, sub glottis and upper trachea. CONCLUSION Lung collapse caused by tracheo-bronchial seedling secondary to repeated nasal polypectomy is a rare manifestation. An awareness and understanding of the presence of rare manifestations in the diagnosis is essential. Whenever we see nasal Rhinosporidiosis, tracheobronchial Rhinosporidiosis should strongly be considered. Keyword: Tracheo-bronchial seedling, Repeated nasal polypectomy.

INTRODUCTION: Rhinosporidiosis is chronic granulomatous infection¹ whose occurrence is endemic in India, Srilanka & South America¹. It most commonly occurs in children and in individuals aged 15-40 years with male preponderance. It is transmitted to humans by direct contact with spores through dust, through infected
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An awareness and understanding of the presence of rare manifestations in the diagnosis is essential as it determines the successful outcome of the treatment.

The aim of the case report is to enable a radiologist become aware of its rare occurrences in tracheobronchial region and the way to diagnose it as the tumor can cause incessant bleeding when biopsy is attempted which is the usual mode of diagnosis for any tumor.

CASE REPORT:
A 50 year old male came to Government General Hospital casualty with progressive worsening of difficulty in breathing for a week. The patient was already on tracheostomy. The attending medical officer referred him to ENT department immediately. Routine investigation were normal. Patient was shifted to OT and visualization of the trachea and bronchus was attempted. Normally the carina is visible to the naked eye through the tracheostomy opening. Since it was not seen and the incessant bleeding further obstructed the process, under general anaesthesia a Hopkin’s endoscope was inserted to visualize the tract. Fleshy mass was seen occluding the lumen throughout up to the left main bronchus. The right bronchus was free. The growth was surgically excised and combined with electrocaogulation of base. Airway was secured with an endotracheal tube through the tracheostomy opening. Specimen of the growth was sent for pathological examination. Hemodynamic stabilization was achieved only after transfusing 4 units of whole blood. Further investigation proceeded with CT imaging.

CT chest, plain and contrast revealed left upper lobe collapse with loculated pneumothorax secondary to the obstruction at the levels of the segmental and terminal bronchus(Fig.1).
He had recurrent episodes of nasal obstruction/discharge in the past (Fig.3) for which he underwent nasal polypectomy about 6 times in Government General Hospital, Chennai in 1975, 1977, 1984, 1990, 1996, 2004. In 2009, patient presented with stridor for which emergency tracheostomy was done and bronchoscopy revealed subglottic and upper tracheal fleshy mass occluding the lumen which was later confirmed as Rhinosporidiosis by histopathological examination.

In 2009, CT neck = showed soft tissue density mass lesion seen occluding the subglottic region and the upper trachea (Fig.4).

**Fig. 4.CT neck**

In 2009, Cutaneous manifestations (Fig.9) were also observed in the left scapular region and documented during this visit. Scrapings from this cutaneous mass revealed mature sporangia in various stages in KOH and gram stain. Patient gave positive history of taking bath in ponds during childhood.

Patient was discharged with tracheostomy tube intact since the chances of obstruction can recur. Tablet. Dapsone 100mg bd7 was prescribed and was asked to come for regular follow up in view of recurrence.

**AFTER 5 MONTHS OF MEDICAL MANAGEMENT, FOLLOW UP IMAGING REVEALED**

Now the Patient has symptomatically improved but is under careful surveillance for future recurrence. The regression of the cutaneous lesion was also noticed3 (Fig.9)
DISCUSSION:
The clinical types of Rhinosporidiosis are Nasal-70%, Ocular-15%, Cutaneous – 25%, and Visceral (lungs and bones) <1%. Very few cases of tracheobronchial Rhinosporidiosis have been reported in various journals so far. The uniqueness in this case is a combined form of muco-cutaneous & visceral rhinosporidiosis. Suspicion of visceral involvement is recommended if patients come with muco-cutaneous manifestations, where CT has its role. The aim of this article is to make aware of the uncommon cause for lung collapse. Since most of the tumours are diagnosed by biopsy attempting such an invasive procedure in Rhinosporidiosis may prove dangerous because of the bleeding complications. In which case, the role of the radiologist becomes important. Imaging techniques play a major role in diagnosing this kind of an uncommon life threatening presentation. Also, the imaging helps in following up recurrences and emergence of new lesions. Timely imaging and hence treatment may prevent complications like lung collapse, bleeding, stridor, etc.

Laryngotracheal involvement poses many diagnostic and therapeutic challenges, due to the potential risk of bleeding and aspiration. Brief communication on the similar presentation by Rekha et al 2006, suggest the same. CT seems to be the preferred investigation in these circumstances as it reveals the complete extent of the mass. In a study conducted in 9 endemic villages in Kanyakumari dt, Tamil Nadu, an endemic focus – unreported cases were to the extent of 9 – 40 %. Whenever we see nasal Rhinosporidiosis, tracheobronchial Rhinosporidiosis should be strongly considered.

Past records of the patient revealed soft tissue density enhancing mass lesion seen occluding both the nasal cavities and also the nasopharynx in CT PNS. Done in 2009. (Fig. 2).

(arrow in A) in CT PNS
CT Chest study showed complete resolution of the lung collapse and total clearing of left bronchus was seen (Fig. 5).

**Fig. 5. A. CT Chest**

![CT Chest Image](image1)

**Fig. 5.B. CT Chest**

cT PNS shows residual mass lesion in the nasal cavity, maxillary antrum and nasopharynx (Fig. 6).

![CT PNS Image](image2)

**Fig 6. A. CT PNS**

**Fig 6.B. CT PNS**

CT neck shows residual mass in the subglottis and upper trachea (Fig. 7).

**Fig 7.A. CT neck**
Fig 7. B.CT neck
Virtual bronchoscopy shows significant airway narrowing in the subglottis and tracheal region (Fig.8).

Fig 8. Virtual bronchoscopy