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# Teratoma presenting as a nasal polypoidal mass in a newborn: an endoscopic resection

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## Abstract

### Introduction

Extragonadal teratomas are more common in the sacrococcygeal region. Although teratomas arising from the head and neck region are rare, they can give rise upper airway obstruction in the newborn, requiring early excision. A 'term' new born delivered with a polypoidal mass protruding through the right nostril, developed respiratory distress due to upper airway obstruction and required intubation. CT and MRI scan of the head showed an irregular shaped mass occupying the right nasal cavity, nasopharynx and protruding into the oral cavity with the possibly of being a teratoma. The tumour was resected endoscopically via transnasal and transoral routes. Histopathology confirmed it as mature teratoma.

### Conclusion

Although most teratoma are benign and asymptomatic, teratomas arising in the head and neck can give rise to upper airway obstruction and respiratory distress in new born and requires intubation to secure airway and early resection.

**Keywords:** Teratoma, upper airway obstruction, endoscopic resection



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## Introduction

Teratomas rank among the most prevalent extragonadal tumours in childhood. The benign variant, known as mature teratoma, comprises mature tissues from at least two of the three germ layers (endodermal, mesodermal, and ectodermal layers)[1]. While teratomas can manifest in various organs, the commonest site is sacrococcygeal region. Although nose and nasopharynx are infrequent sites, they typically manifest as large masses, obstructing the upper airway and causing respiratory distress immediately after birth[2,3]. In this article we will be scrutinizing the clinical, radiological, and histopathological findings, and review the treatment approach for this uncommon condition.

## Case Report

A 26-year-old, primigravida with uncomplicated prenatal period, delivered a baby girl at 39 weeks of gestational age by normal delivery at a local hospital. At birth the APGAR score was 8 and at after 5 minutes, it began deteriorating and cyanosis developed when the baby stopped crying and later developed respiratory distress. The baby was intubated due to the respiratory distress. On examination the baby was seen having a fleshy polyp coming through the nasal cavity (Figure 1) and also having cleft lip. On the second day baby was transferred to a tertiary care paediatric hospital.

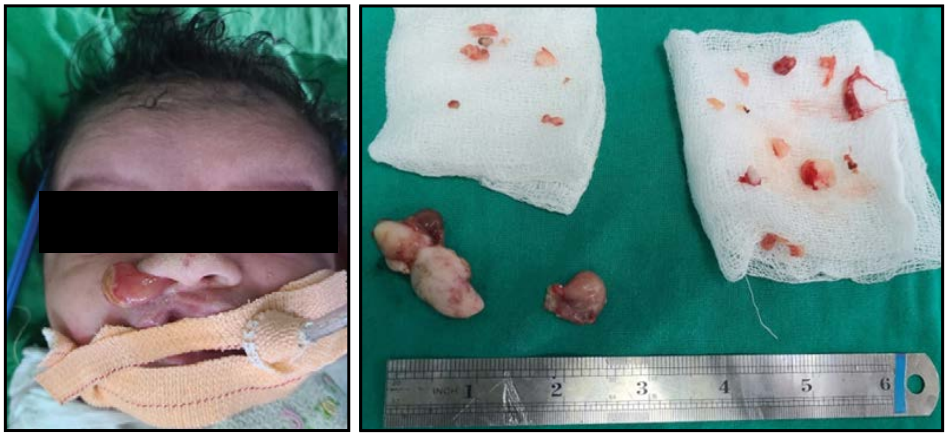

Figure 1: A. Polypoidal mass protruding through right, nasal cavity, B. Tumour pieces after resection

MRI and CT scans were performed and it showed an irregular mass occupying the right side of the whole nasal cavity and nasopharynx and protruding into the oral cavity. It also revealed, right side cleft lip and cleft palate (Figure 2).

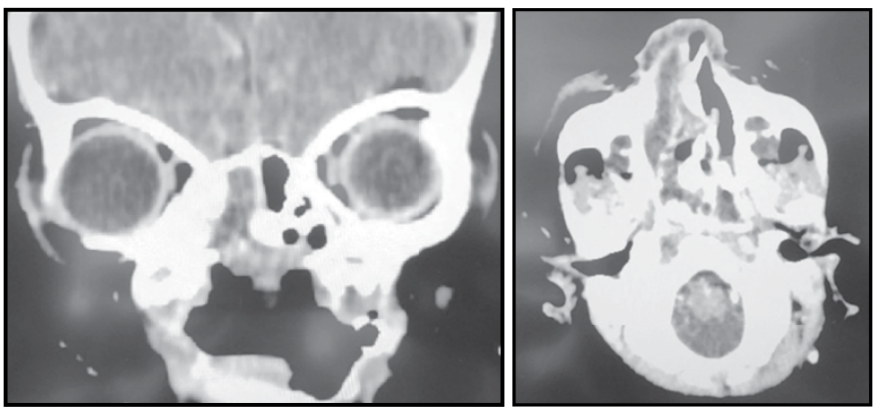

Figure 2: Contrast enhanced CT of nose and paranasal sinuses shows the tumour; A. Coronal view, B. Axial view.

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On day 12, the baby underwent surgical resection. We were able to remove the tumour mass endoscopically using both transnasal, trans oral approaches. Both nasal and oral cavities were packed after resection and those were removed following day. The baby was extubated on the 2nd post operative day without any problem. Histology was reported as a mature teratoma with immature neural tissue without any malignant component. The baby was referred to the plastic surgical unit for future cleft palate and cleft lip repair.

## Discussion

Teratomas are most commonly found in the sacrococcygeal region, occurring in one in every 4,000 live births. The head and neck region follows as the second most frequent site, constituting 6–10% of all teratomas.3 Nasal and nasopharyngeal teratomas, although rare, can present at birth, unlike sacrococcygeal and head-neck teratomas[3].

Teratomas are categorized into mature and immature types. Mature teratomas, are benign, and may contain various mature tissues deriving from the three germ layers, such as hair, sweat glands, teeth, adipose tissue, nails, nerves, cartilage, bone, muscles and tissues from organs like exocrine glands, gastrointestinal tract and the respiratory tract[5]. Histopathological examination of our case revealed tooth and neural tissue.

Development of teratoma is explained by two theories, one suggests the development of teratomas from embryonic cells other than germ cells while the other proposes errors in embryonic germ cell migration to the gonadal protuberance[1-3].

Radiologically, teratomas in the head and neck region can be assessed using ultrasound scan (USS) but, in areas like the nose and nasopharynx where USS is difficult, unless it is protruding through the nose as in our case. CT and MRI become crucial for differential diagnosis, and also to exclude masses originating in the intracranium and protruding through skull base defect such as a meningocele or encephalocele[5].

During pregnancy, USS, especially three-dimensional USS, aids in early diagnosis. Pharyngeal teratomas may cause polyhydramnios and elevated maternal α-fetoprotein levels. Pharyngeal teratomas, including nasopharyngeal teratomas, can lead to respiratory distress due to the obstruction of upper airway shortly after delivery. Despite their benign nature, nasopharyngeal teratomas pose a high morbidity and mortality risk. Early surgery is recommended to minimize intubation and hospital stay duration[3].

Long-term follow-up literature lacks information on potential issues after nose and nasopharyngeal teratoma surgery.

## Key Messages /Conclusion

Despite their rarity and benign nature, nose and nasopharyngeal mature teratomas demand urgent attention, especially in newborns. Early and complete removal of the tumour is crucial, requiring close collaboration amongst otolaryngologists, paediatricians and obstetricians for successful diagnosis and treatment in the head and neck region.

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