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Clinical Image

Congenital Oropharyngeal Hairy Polyp: An Unusual Cause of Neonatal Stridor

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Case Report

A 1-day-old female infant, 3.1 kg, born vaginally at full term and cried immediately at birth was referred to our emergency for inspiratory stridor, cyanosis, and feeding difficulties. Mother had uneventful ante-natal history and pre-natal scans revealed no congenital anomaly of foetus. The child underwent orotracheal intubation and required mechanical ventilation because of worsening of cardio-respiratory status. Otorhinolaryngologic examination revealed a firm, whitish, pedunculated, skin-covered mass filling the oropharynx (Figure 1A). Nasal endoscopy showed the presence of a mass occupying bilateral posterior choanae. Systemic examination was unremarkable with no signs of any congenital anomaly. Contrast-enhanced CT showed a 4 x 2 cm hypoechoic mass with fatty attenuation occupying the naso-oropharynx extending superiorly from clivus, anteriorly up to choana, and inferiorly till C3/C4 vertebral level with no intracranial or intraspinal extension (Figure 1B and 1C). The child underwent endoscopic-guided transoral excision of mass using Coblator device and the pedicle arising from left posterior tonsillar pillar was dissected and base was cauterized (Figure 2A). Histopathology examination revealed ectodermal and mesodermal elements in a polypoidal structure lined by stratified squamous epithelium with pilosebaceous units with underlying tissue, adipose tissue, skeletal muscle, cartilage, and seromucinous minor salivary glands consistent with hairy polyp (Figure 2B and 2C). Child was extubated the next day and had an uneventful post-operative recovery. At 1-year follow up child is disease-free having normal growth and developmental milestones and feeding orally well.

Figure 1: A pedunculated polyp filling the oral cavity appeared to originate from oropharynx and sitting above the tongue(1A), Contrast enhanced computed tomography sagittal view (1B) and axial view (1C) showing hypoechoic mass with fatty attenuation filling the nasopharynx and oropharynx (yellow arrow) extending superiorly from skull base to upper tracheal level inferiorly.

Figure 2: Excised and longitudinally cut opened pedunculated polyp measuring 4 x 2 cm showing surface hair appendages (2A), polypoidal structure lined by variably thick stratified squamous epithelium with underlying skin appendages (pilosebaceous units) (2B; HE, 100x) and admixture of adipose tissue lobules, skeletal muscle bundles and nerve bundle (2C; HE, 100x).

Discussion

Hairy polyps or dermoid are rare, benign, congenital malformation that develops from two germinal layers, ectoderm [1]. They are seen more commonly among female infants and arise predominantly from left side of naso-oropharynx and less commonly develop from tongue, middle ear, mastoid cavity and eustachain tube [2]. Embryologically, Hairy polyps need to be differentiated from teratoma, which contains derivatives of all three germ layers, teratoids which is a poorly differentiated counterpart of teratoma, and epignathi which is the most differentiated form resembling a parasitic foetus having high mortality rate [3,4]. They may occur in association with head and neck congenital anomalies like cleft palate, facial dysplasia, pinna deformity, osteopetrosis, ankyloglossia and left carotid artery agenesis which suggests their probable origin from first and second branchial arch remnants [5,6]. The size and location of polyp determine the symptomatology in the perinatal period which includes rhinorrhoea, epistaxis, cough, vomiting, feeding difficulty, eustachian tube blockage, respiratory distress, cyanosis, and life-threatening asphyxiation [7]. They may be associated with maternal polyhydramnios during antenatal period because of inability of foetus to swallow amniotic fluid due to the presence of oral mass. Hairy polyps must be differentiated from various congenital causes of upper airway obstruction like nasal glioma, encephalocele, meningoencephalocele, haemangioma, lymphovascular malformation, teratoma, epidermoid, yolk sac tumour, congenital saccular cysts etc. [1,2,4]. Life-threatening congenital obstructive airway masses can be diagnosed by foetal MRI or ultrasound and ex-utero intrapartum treatment (EXIT) using multidisciplinary team has proven beneficial in securing airway at birth [8]. Transoral or nasal endoscopy is the gold standard investigation in the diagnostic workup of hairy polyp while CT and MRI aid in localizing the origin of lesion, measuring the size and, ruling out intracranial or intraspinous extension. Additionally, MRI also helps differentiate between a fat-containing hairy polyps (T1 hyperintense) from vascular or neurogenic lesions [5]. Histologically, it is composed of a mesodermal core which includes fat, muscle, cartilage, or bone covered by stratified squamous epithelium with pilosebaceous units [1]. Management includes securing the airway either by intubation or rarely by tracheostomy followed by transoral or nasal excision of the mass and recurrence is seldom reported in literature [1,5,9].

Learning Points/Take Home Messages

- Congenital hairy polyps, though rare may cause life-threatening asphyxiation in the neonatal period which requires immediate securing of the airway
- Transoral or nasal endoscopy supplemented with radiology aids in locating the origin of the lesion and its extension, the diagnosis is confirmed by histopathology which shows the presence of ectodermal and mesodermal derivatives.
- Surgical excision is curative and the prognosis is good.

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