

Hairy Polyp of the Nasopharynx - The Importance of Team Work

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Received: March 25, 2019; **Published:** April 25, 2019

Abstract

Hairy polyps are rare benign congenital dermoid tumors consisting of both mesodermal and ectodermal elements. They are soft, fleshy, pedunculated masses typically located in nasopharynx or oropharynx. Generally, they present as a single mass at birth or soon after. Clinical manifestations include respiratory distress, shortness of breath, cyanosis, and difficulties with oral intake. On histology, hairy polyps comprise an outer keratinizing squamous epithelium with adnexal tissue, including hair follicles, and central fibro - adipose and cartilaginous tissue.

The medical imaging workup of a neck lesions in a child must be focused to yield the maximum information possible while minimizing the risks of radiation and sedation. The major advantages of magnetic resonance imaging are its superior soft tissue resolution and the absence of ionizing radiation, which make it a modality of choice. Magnetic resonance imaging is helpful in characterizing the lesions and providing preoperative diagnosis. Furthermore, magnetic resonance imaging is helpful in delineating the site of origin of these lesions, which can facilitate surgical planning and exclude an intracranial component. This is of the major importance if trans-nasal approach with endoscopy is planned in order to avoid injury to critical structures, such as the internal carotid artery.

This case emphasises the importance of multidisciplinary approach in neonates with nasopharyngeal masses in order to provide timely and accurate diagnosis as well as the optimal treatment.

Keywords: Hairy Polyp; Congenital Dermoid Tumors; Nasopharynx; Neonate; Magnetic Resonance Imaging

Abbreviations

MRI: Magnetic Resonance Imaging; CT: Computed tomography

Introduction

Congenital hairy polyps are rare benign tumors consisting of both mesodermal and ectodermal elements. They are soft, fleshy, pedunculated lesions. To date, hairy polyps have been documented in the nasopharynx, soft and hard palate, tongue, pharynx, tonsil, palatopharyngeal and palatoglossal muscles, external auditory canal, middle ear, mastoid, hypopharynx, esophagus, and trachea [1]. Histologically, hairy polyps include squamous epithelium, adnexal structures, fat, cartilage and fibrous tissues, which generally classifies these masses as dermoids according to Arnold's classification [2]. Hairy polyps may be asymptomatic but commonly present with respiratory problems

such as respiratory distress, shortness of breath, cyanosis, and difficulties with oral intake. In most cases, clinical examination combined with imaging techniques and biopsy confirms the diagnosis. The treatment of choice is surgical excision and most patients recover completely.

Case Report

A 6-week-old full-term female baby was admitted to the Division of Neonatology after otorhinolaryngologic examination. The baby presented with intermittent upper airway obstruction described by parents as the, Department of Pediatrics, Clinical Hospital Rijeka, Croatia, “crunching” during inspiration and expiration, repeated around 30 times a day and lasting irregularly from 30 seconds to 30 minutes.

On examination, an oval, smooth mass was visible in the left side of oropharynx, appeared to descend from the lateral wall of nasopharynx. No other abnormalities in the head and neck region were found.

Magnetic resonance imaging (MRI) revealed a lobular mass of 10 mm x 4.8 mm on the left nasopharynx, spanning from torus tubarius to pharyngeal recess. Right and posterior nasopharynx were without pathological asymmetries. Hypopharynx and laryngeal structures showed no abnormalities (Figure 1).

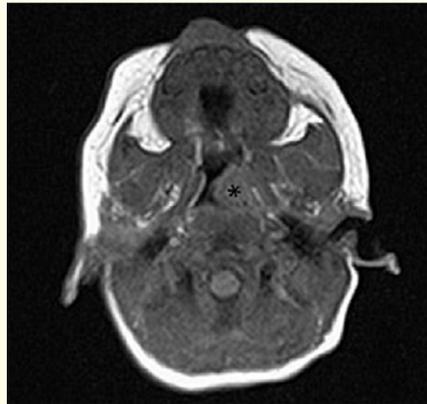


Figure 1: Axial non-enhanced T1-weighted image at the level of nasopharynx shows an oval, well-circumscribed mass (asterisk) at the left posterior part of pharyngeal wall.

Four days later surgery with transoral and endoscopically assisted transnasal approach was performed under general anesthesia. Smooth polypoid mass originating from upper side of the soft palate, lateral nasopharynx and oropharynx from torus tubarius till the posterior palatopharyngeal arch was excised completely. Postoperative course was uneventful.

The excisional material was a soft tissue mass measuring 4 cm x 2 cm x 1.3 cm (Figure 2).



Figure 2: Gross specimen photograph shows a smooth white polypoid mass of 4 cm x 2 cm x 1.3 cm covered by skin.

On histology the lesion demonstrated adnexal skin structures overlying mesenchymal tissue comprised mostly of fat and cartilaginous nodules. Two smaller parts of 0.4 cm in diameter were covered with stratified squamous epithelium and consisted of muscle cells and seromucous glands. The findings were consistent with hairy polyp. MRI repeated after 2 months was within normal limits. At 1 year follow-up, the child is in a good condition and without breathing or oral intake difficulties.

Discussion

Hairy polyps are rare congenital tumors that usually appear in early childhood, mostly affecting neonates and infants. Females are six times more affected than males [3]. Most tumors are located in nasopharynx and oropharynx. Hairy polyps of the nasopharynx predominantly arise from the lateral wall or superior aspect of the pharynx located but can also origin from the hard and soft palates, tonsils, tongue, Eustachian tube, and middle ear [4-7]. Most of the reported cases are left sided. Female prevalence and left sided predominance are still not explained. No association with other congenital anomalies has been reported. Hairy polyps have been classified as hamartoma, choristoma, teratoma or dermoid. Hamartomas, despite their potential similarity to hairy polyps, are different type of malformations composed of tissues native to their environment. On the contrary, choristomas form histologically normal tissue in foreign environment. Teratomas consist of endodermal, mesodermal and ectodermal structures. They have malignant potential and occur equally in males and females. On histology, hairy polyps comprise of mesodermal and ectodermal derivatives and are most appropriately characterized as dermoids [7]. The mesenchymal components often include fat and cartilage, while the outer ectodermal layer is comprised of a keratinizing squamous epithelium with adnexal structures, such as hair follicles, hence the term hairy polyp [8]. They usually present as a sausage or pear-shaped, pedunculated mass with limited growth potential and no malignant polyp has been reported [1]. Clinical presentation may vary, depending on the location and size of the lesion. Symptoms include respiratory distress, stridor, coughing, snoring and feeding difficulties leading to poor weight gain. Differential diagnoses of naso/oropharyngeal masses in children encompass a wide spectrum of lesions including, but not limited to, teratoma, encephalocele, craniopharyngioma, chordoma, hamartoma, glioma, neurofibroma, rhabdomyosarcoma, and vascular anomalies [9].

Radiological imaging is very useful and provides information about the origin and the extent of the mass, as well as possible complications and helps planning the surgery. Computed tomography (CT) provides detailed images of the mass and surrounding bones and soft tissue, Main concern is high radiation exposure of neonates and infants. Characteristic imaging features on CT include a smooth polypoid mass, containing fat with central linear soft tissue attenuation that corresponds to the fibrovascular stalk [6]. MRI delineates precisely the characteristics and extent of the mass and its relationship to the vascular and muscular structures as it is the imaging modality that yields most detailed view of the soft tissues [10]. Its main advantage, in comparison to CT, is the absence of ionizing radiation so it is the primary imaging for children.

Hairy polyps demonstrate high signal intensity in T1-weighted sequences because of the high amount of fat tissue. The high fat content narrows the differential diagnosis of a neonatal naso/oropharyngeal mass to hamartoma, teratoma, or dermoid, and is useful to exclude lesions such as neuroblastoma, meningoencephalocele, vascular anomalies, and embryonic cysts [4,6,11]. Teratomas and hamartomas, as fat-containing masses tend to be more heterogeneous [12] and lipomas and their variants, such as chondrolipomas or fibrolipomas, arise from the nasopharynx, Eustachian tube very infrequently, and occur mostly in adults [13].

Treatment of hairy polyp involves securing the airway and surgical resection. Excision is usually achieved via transnasal and transoral approach. Intraoperative endoscopic visualization is recommended to avoid damaging the Eustachian tube and internal carotid artery which are sometimes very close to the lesion. Postoperative complications are very rare, and include velopharyngeal dysfunction following surgical excision and feeding difficulties [14]. Most patients recover without complications after complete surgical excision and recurrence is rare.

Conclusion

Hairy polyps are rare benign lesions which commonly present at or shortly after birth, usually arising from the lateral wall or superior aspect of the pharynx. Although the differential diagnosis for pediatric nasopharyngeal masses is broad, imaging findings of hairy polyps are rather characteristic. Magnetic resonance imaging is the modality of choice due to superior soft tissue contrast and lack of ionising radiation exposure. Preoperative imaging and staging of the mass are important for surgical planning and avoiding injury to critical structures, such as the internal carotid artery.

In our case, a multidisciplinary approach led to the prompt and straightforward diagnosis, as well as a secure road-map for surgery avoiding the need of preoperative biopsy. It confirms that that good collaboration between specialists significantly influences patient's outcome.

Conflict of Interest

We declare that no financial interest, or any conflict of interest exists.

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Volume 8 Issue 5 May 2019

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