Tornwaldt Cyst: A Cause of Neck Pain and Stiffness

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Abstract Nasopharyngeal cysts are rare, small in size and asymptomatic, usually diagnosed as in incidental finding on MRI. Large cyst commonly presents with obstructive symptoms. Tornwaldt cysts occur in the mid-line bursa of the nasopharynx above the upper border of the superior constrictor muscle. They represent as a communication between notochord remnants and the pharyngeal endoderm. We report this case because of its presentation and size (2.5×2 cm). It was presented as intermittent cervical pain, stiffness and vertigo because of prevertebral cervical muscle spasm due to cyst and nasal symptoms were not predominant. Although rare, it should be kept as a differential diagnosis for cervical myelgia and stiffness.

Keywords Tornwaldt cyst · Neck stiffness · MRI · Marsupialization

Introduction

Tornwaldt cyst or Thornwaldt cyst or Nasopharyngeal cyst represents the remnant of notochord. It is usually small and accidentally diagnosed on MRI. Large sized cyst may

presents with nasal, ear or cervical symptoms. Recurrent nasopharyngeal infection and trauma are common etiological factor. Surgical intervention require in symptomatic patient irrespective of its size.

Case Report

A 30 years male patient referred to us by our orthopedic colleagues for nasopharyngeal mass which was diagnosed incidentally on MRI. He gave history of neck pain during movement and occasional stiffness and giddiness since last 1 year. Since last 3 months he had intermittent nasal obstruction. No history of recurrent cold, sneezing and epistaxis. Nasal examination was normal except posterior rhinoscopy which showed a smooth, pink color mass occupying post nasal space completely. Otoscopic examination showed bilateral grade 2 retraction of tympanic membrane (Eustachian tube obstruction). There was no neurological deficit. MRI showed an about 2.5×2 cm well defined mass with mild enhancement present in nasopharynx without intracranial extension or connection and any bone involvement (Fig. 1). Nasopharyngeal cyst was diagnosed. Cyst was marsupialized with the help of endoscope (Fig. 2). After surgery patient improved in terms of cervical pain and stiffness. He is doing well in follow-ups.

Discussion

A Tornwaldt cyst (Thornwaldt cyst) is a developmental benign cyst [1]. It presents in the midline within the nasopharynx. It represents a persistent communication between the roof of the nasopharynx and the notochord. Its formation

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Fig. 1 MRI [T1 (a, c), T2 (b, d, e)] showing a well defined with mild enhancement mass in the nasopharynx

Fig. 2 Endoscopic view showing mass in nasopharynx extending from the roof up to the soft palate

is the result of a potential space developing in the nasopharynx at the point where the notochord retains its union with the pharyngeal ectoderm resulting in the out pouching of ectoderm into the pharyngobasilar fascia [1]. When this epithelial lined pouch secretes mucus, it leads to the cyst formation. Mucus production may be spontaneous or secondary to inflammation. During inflammation there is edema of the orifice of pharyngeal diverticula which leads to formation of a cyst. Nasopharyngeal surgical procedures, i.e. adenoidectomy leads to damage to the pharyngeal duct orifice and subsequent infection may be one of the theories for cyst formation. It is present in about 4% of autopsied patient with age incidence between 15 and 30 years. There is no sex predilection. In most of the patient it is asymptomatic and don't require any treatment. In symptomatic patient, it presents with middle ear symptoms [2] (from Eustachian tube obstruction), halitosis (when associated with a leaking sinus tract), foul taste in mouth and prevertebral spasm [3].

MRI is the investigation of choice. The presence of protein and/or associated hemorrhage within the cyst leads to high signal intensity on both T1- and T2-weighted images. The conventional definition of a Thornwaldt cyst is a lesion situated between the longus capitis muscles, that is at least 7 mm or larger in diameter, without associated inflammatory changes in the surrounding soft tissues or concurrent bone involvement. Fat saturated axial T1 weighted pre and post contrast images of the neck is suggested to optimally assess the lesion and the surrounding soft tissues and the osseous structures. On CT scan a low density, well capsulated mass in the roof of nasopharynx is suggestive of Thornwaldt cyst. Differential diagnosis of this cyst is branchial cleft cyst; Rathkes cleft cyst, adenoid retention cyst, meningoceles, encephalocele and meningocele [4]. Surgical treatment in symptomatic patient is advisable. Excision or Marsupialization of the cyst is the surgery of choice [5]. Procedure can be done with help of nasal endoscope and microdebrider. Aspiration alone leads to recurrence.

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