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Uncommon variant of lipoma of eustachian tube as a cause of middle ear effusion

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SUMMARY

A 43-year old male patient was admitted to our clinic with complaints of a sensation of fullness and hearing loss in the right ear for four months. Otoscopic examination revealed the presence of air-fluid level behind the tympanic membrane in the right ear. Fiberoptic nasopharyngoscopy showed a well-circumscribed, about 5 mm in diamater, round-shaped mass on the pharyngeal orifice of the right eustachian tube. En bloc surgical resection of the mass was achieved by endoscopic approach. Histopathological findings were consistent with fibrolipoma. Fibrolipoma, a benign tumor, is one of the uncommon variant of lipoma. Eustachian tube is a very unusual location for fibrolipoma. Primary tumors of the eustachian tube should be kept in mind as a cause of middle ear effusion. This case emphasizes importance of detailed endoscopic examination of the nasopharynx in patients with unilateral middle ear effusion.

Key words: *Fibrolipoma, Eustachian Tube, Nasopharyngoscopy*

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Introduction

Lipomas, derived from the mesenchyme, are the most common soft-tissue tumors in the body, but only 15% of them are located in the head and neck region (1). Head and neck lipomas usually arise from posterior cervical triangle and rarely occur in nasopharynx (2). The incidence of lipoma in the eustachian tube is very rare (3). Fibrolipoma is one of the unusual subtype of the lipoma (4). Two case reports of eustachian tube fibrolipoma have been presented in the English literature. Herein, we reported the third case of eustachian tube fibrolipoma that presented with otitis media with effusion and originated from the anterior-inferior portion of the eustachian tube pharyngeal orifice.

Case Report

A 43-year old male was admitted to our clinic with complaints of a sensation of fullness and hearing loss in the right ear for four mounths. Patient had no other contributory past medical history. The patient also denied any recent upper respiratory tract infection. On otoscopic examination, air-fluid level was detected in the right ear. Otoscopic examination of the left ear was normal. Weber's test lateralized to the affected right ear. Rinne's test was negative on the right side and positive on the normal left side. Right tympanic membrane was immobile to Valsalva maneuver. Endoscopy displayed a yellowish, well defined, round-shaped mass about 5 mm in diameter located on the right side of the nasopharynx(Figure 2a, figure 3a). Palpation of the mass with a freer elevator revealed that lesion was painless and soft. It was attached on the anterior-inferior lip of the pharyngeal opening by a broad base peduncle(Figure 3b). While the tumour was mobile, it completely blocked the tube opening, acting like a ball valve. Pure tone audiogram revealed a right-sided 42-dB conductive hearing loss with a 30-dB air-bone gap, whereas the tympanogram was type C, typical of eustachian tube dysfunction. Radiologic evaluation was performed for estimation of the extent of the lesion. Contrast-enhanced computed tomography (CT) was done, which showed a well-defined, hypodense lesion that measured 4x5 mm and located at the distal end of the right eustachian tube(Figure 2b). Magnetic Resonance Imaging (MRI) revealed that mass was limited to mucosa and had no invasive borders(Figure 2c). Temporal Bone CT image demonstrated the opacification of the right mastoid air cells due to effusion of fluid(Figure 2d). Preoperative biopsy of the mass was not needed since there was no clinical sign of malignancy and imaging findings were highly suggestive of a

benign tumor of eustachian tube. The patient was admitted for surgical intervention under general anesthesia. We first performed incision through the peduncle of the mass with a sickle knife(Figure 3c), followed by the mass dissection, and then completely removed the mass under endoscopic vision. Pharyngeal opening of the right eustachian tube was visualized immediately after the excision (Figure 3d).

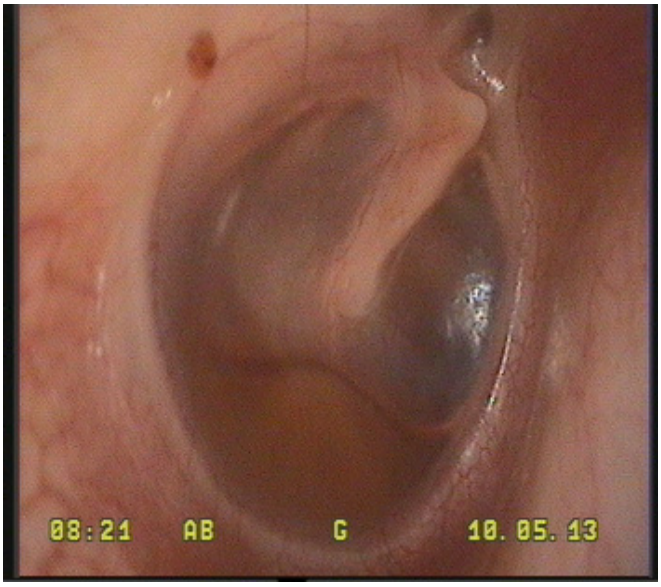

Figure 1. Otitis media with effusion in right ear

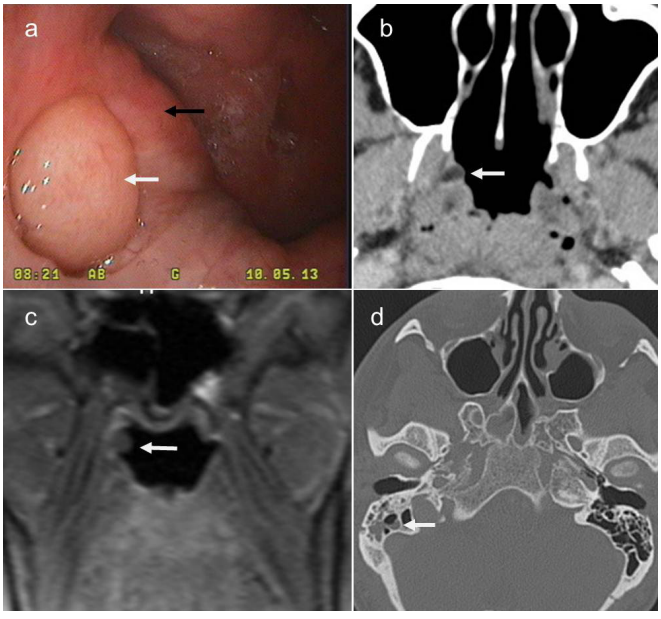

Figure 2. **a.** Transnasal endoscopic close-up view of the mass that obstructs the pharyngeal orifice of the right eustachian tube (white arrow: fibrolipoma, black arrow: torus tubarius) **b.** Axial slice of neck CT shows hipodense, well-defined, non-enhancing mass lesion consistent with lipoma(white arrow) **c.** Coronal view of MRI revealed that the mass lesion limited the mucosa(white arrow) **d.** Axial image of temporal bone CT displayed the opacification of the right mastoid air cells due to effusion of fluid(white arrow).

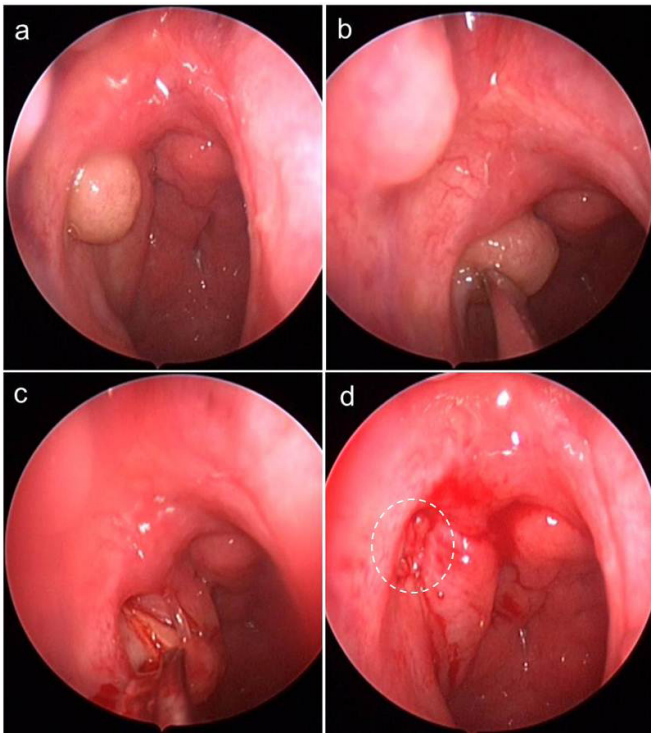

Figure 3. **a.** Transnasal intraoperative view of the mass immediately before the resection **b.** Pedincle of the mass revealed by a freer elevator **c.** An incision made through the peduncle of the mass with a sickle knife and the mass excised **d.** The right eustachian tube orifice (dotted circle) obtained intraoperatively after the removal of the mass.

The mass was resected taking care to preserve the pharyngeal ostium mucosa of the auditory tube. A tympanostomy tube inserted into the right eardrum immediately after the mass resection. The postoperative period was uneventful. The patient took one week antibiotic treatment. Section through the resected specimen revealed a well-encapsulated mass containing a large amount of fat and a small amount of fibrous tissue. Evidence of a malignant condition was absent. The histopathological diagnosis was fibrolipoma(Figure 4).

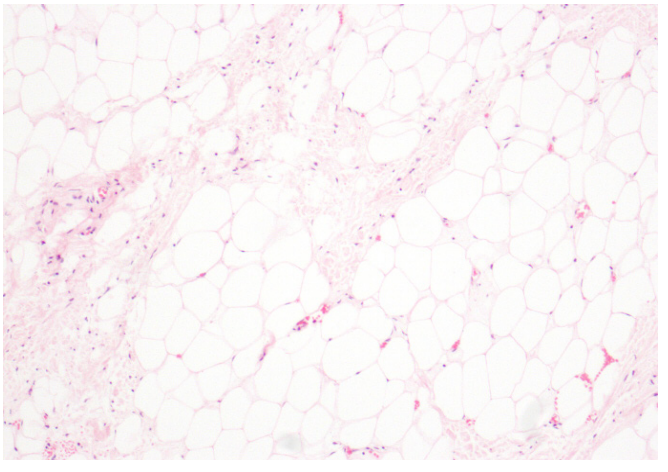

Figure 4. The histopathologic appearance of fibrolipoma is characterised by prominent mature adipocytes intermixed with bundles of mature collagenous stroma.(x100, HE)

Otitis media with effusion resolved during follow-up. Typanostomy tube fall out three months later, but otitis media with effusion did not recurred. Six months later; otoscopic examinaton was normal, endoscopic examination of nasopharynx revealed patent pharyngeal tubal opening and no recurrence of fibrolipoma. Written informed consent for both operation and this case report were obtained from the patient who participated in this paper.

Discussion

Fibrolipomas are very rare, which is composing 1.6 % of the facial lipomas (4). There are cases in head and neck region reported as fibrolipomas in the pharynx, eustachian tube, trachea, larynx and oral cavity (4). The majority of these benign tumors are asymptomatic, and symptoms result from pressure effects on adjacent structures (3). Lipomas are common benign tumors that arising from the adipose tissue and consist of mature a adipocytes, derived from the mesenchyme. Variable subtypes occur when other mesenchymal elements present (5). Histologic variants of lipomas include myxolipoma, myolipoma, fibrolipoma, angiolipoma, osteolipoma, spindle cell lipoma and chondroid lipoma (5). Fibrolipoma is characterised by prominent bundles of mature collagenous or myxocollagenous stroma intermixed with mature adipocytes (6). The consistency of fibrolipoma varies from soft to solid and this depends on the distribution of fibrous tissue (1) .

Homogeneous fatty attenuation upon CT has been indicated for lipomas. However, they may have different imaging intensities according to the variable tissue configurations (3). While CT is useful for diagnosing lipoma, MRI is preferred over CT for detailed image of soft tissue (7). Lipoma is seen as homogenous, hipodense, well-defined non-enhancing lesion on CT (7). MRI is important for delineating the limits and soft tissue extension of lesion(7).

Benign and malignant tumors of the nasopharynx may present with unilateral otitis media with effusion and conductive hearing loss due to auditory tube dysfunction. It can result from mechanic obstruction, mucosal edema or blocked lymphatic system of the eustachian tube. Malignant tumor may also cause tubal dysfunction by invading the muscles and cartilaginous portion of the auditory tube (8). In this case, the benign mass lesion located exactly on the pharyngeal orifice of the right eustachian tube in both endoscopic and radiologic examination. Endoscopic examination revaled that mass was mobile, acting like a ball valve and completely blocking the tube opening while swallowing or yawning. So, we have been suggested that otitis media with effusion of the patient is due to mechanical obstruction of pharyngeal opening of the auditory tube. If the tumor grows large enough, it may cause nasal obstruction. A mass in the neck due to cervical nodal metastasis might be the first symptom of a malignant nasopharyngeal tumor.

The differential diagnosis of nasopharyngeal masses includes a broad range of benign and malignant tumors. Some soft tissue prominence in the nasopharynx due to adenoidal hypertrophy is the most common benign tumor of the nasopharynx (9). Juvenile nasopharyngeal angiofibroma, Thornwaldt's cyst are other common benign tumors of nasopharynx (9). Asymmetric swelling of nasopharyngeal soft tissue is worrisome especially in an adult patient with unilateral otitis media with effusion. It should be investigated carefully to rule out the nasopharyngeal carcinoma (10). Minor salivary gland neoplasm, lymphoma and sarcoma also may arise within the nasopharynx (9).

A literature review reveals different types of tumor and tumor-like lesions affecting primarily the auditory tube. These lesions include lipoma (3,6), dermoid cyst (11),malignant mucosal melanoma (12), synovial sarcoma(13), adenocarcinoma (14), teratoma (15), osseous hamartoma(16).

Liu et al and Thakur et al (3,6) have reported lipomas of the eustachian tube. Nasal obstruction was the major symptom of these patients. They excised the tumor by transnasal endoscopic approach and reported no recurrence during follow-up. Thakur excised the mass by using electrocautery with modified metallic suction tube preserving the eustachian isthmus. Liu first performed the partial middle turbinate resection to obtain the mass, and after removed the mass. In present case, aural symptoms are the major complaints of the patient. We preferred the transnasal endoscopic approach for access to the lesion and mass removal.

It is difficult to have good exposure to eustachian tube due to its deep location. Zollner et al suggested to approach of open mastodectomy cavity to tympanic orifice and osteal part of eustachian tube (17). With the advantage of the endoscope, it is possible to perform endoscopic approach for the treatment of disease involving the eustachian tube (3). Endoscope is useful not only having a good exposure but also preventing trauma to the eustachian tube ostium and avoiding its sequel (3).

Conclusion

Unilateral hearing loss due to otitis media with effusion in an adult may be the symptom of nasopharyngeal neoplasms. Primary benign tumors of eustachian tube must be kept in mind in the differantial diagnosis of such patients. A thorough nasopharyngeal examination is essential in these patients. Transnasal endoscopic approach is a good choice for the surgical treatment of the lesions involving the pharyngeal orifice of the eustachian tube.

References

1. Khubchandani M, Thosar NR, Bahadure RN, Baliga MS, Gaikwad RN. Fibrolipoma of buccal mucosa. Contemp Clin Dent. 2012;3(Suppl 1):112-4.
2. Durmaz A, Tosun F, Kurt B, Gerek M, Birkent H .Osteolipoma of the nasopharynx.J Craniofac Surg. 2007 ;18(5):1176-9
3. Liu Z, Wang D, Liu Q. The presence of a lipoma in the Eustachian tube: a case report. J Med Case Rep. 2011; 6;5(1):436.
4. Ozturk M, Ila K, Kara A, Iseri M. Fibrolipoma of the nasal septum; report of the first case. J Otolaryngol Head Neck Surg. 2013; 2;42:11.
5. Hameed M. Pathology and genetics of adipocytic tumors. Cytogenet Genome Res. 2007;118(2-4):138-47.
6. Thakur JS, Saluja M, Sharma DR, Mohindroo NK. Fibrolipoma of the eustachian ostium. BMJ Case Rep. 2013; 25;2013

7. Kransdorf MJ, Bancroft LW, Peterson JJ, Murphey MD, Foster WC, Temple HT. Imaging of fatty tumors: distinction of lipoma and well-differentiated liposarcoma. Radiology. 2002;224(1):99-104.

8. Low Wk, Lim TA, Fan YF, Balakrishnan A, Pathogenesis of middle ear effusion in nasopharyngeal carcinoma: a new perspective. J Laryngol Otol. 1997; 111(5):431-34.

9. Duarte VM, Liu YF, Shapiro NL.Uncommon presentation of a benign nasopharyngeal mass in an adolescent: comprehensive review of pediatric nasopharyngeal masses.Case Rep Pediatr. 2013;2013:816409.

10. Ozcan C, Görür K, Unal M. Adult onset otitis media with effusion: an etiologic study. Kulak Burun Bogaz Ihtis Derg. 2002;9(4):267-70.

11. Kollias SS, Ball WS, Jr., Prenger EC, Myers CM, 3rd. Dermoids of the eustachian tube: CT and MR findings with histologic correlation. AJNR Am J Neuroradiol. 1995;16(4):663-8.

12. Tanaka H, Kohno A, Gomi N, Matsueda K, Mitani H, Kawabata K, et al. Malignant mucosal melanoma of the eustachian tube. Radiat Med. 2008;26(5):305-8.

13. Lin HC, Friedman M, Kuo FY, Huang HY. Synovial sarcoma of the Eustachian tube. Head Neck. 2009;31(9):1245-8.

14. Glicksman JT, Franklin JH, Shepherd J, Rotenberg BW. An endonasal approach to the resection of a papillary seromucinous adenocarcinoma of the eustacian tube. J Otolaryngol Head Neck Surg. 2013; 4;42:12.

15. Wasinwong Y, Chaipasithikul S, Kanchanapitak P. Eustachian tube mature teratoma. Otolaryngol Head Neck Surg. 2003;128(4):589-91.

16. Kawamoto A, Katori Y, Honkura Y, Ogura M, Oshima T, Kobayashi T Clin Pract. Osseous hamartoma arising from the eustachian tube.2013; 9;3(2)

17. Zollner F. Therapy of the Eustachian Tube. Arch Otolaryngol. 1963;78:394-9.