A Case of Pterygopalatoma with Misdiagnosed as Secretory Otitis Media

Yue Liu
The Second Hospital of Jilin University
Yan Liu
The Second Hospital Of Jilin University
Xue Zhao
The Second Hospital Of Jilin University
Hai Xian Guo
The Second Hospital Of Jilin University
Dan Yu (yudanent@126.com)
second hospital of jilin university

Case Report

Keywords: Secretory otitis media, Etiology, Pterygopalatine tumor, Diagnosis

Posted Date: November 19th, 2021

DOI: https://doi.org/10.21203/rs.3.rs-1049717/v1

Abstract

Objective: This case improves the early etiologic diagnosis of recurrent and refractory secretory otitis media, avoiding missed diagnosis and misdiagnosis.

Methods: Collecting the clinical manifestations of this case, fiberoptic otoscopy + fiber nasopharyngoscopy and imaging features.

Results: This patient was admitted to the hospital with hearing loss and ear suffocation. He did not find the cause at the beginning of the disease. Before the hospital, he underwent the treatment of tympanic incision and eustachian tube balloon expansion with simple secretory otitis media, but still recurrent, he came into our hospital through imaging and other further examination this time, having the clear cause that the secretory otitis media recurrent episodes due to tumor lesions in the pterygopalatine. Under the general anesthesia, the navigation system assisted the endoscopic sinus combined with the cryo-plasma wing axillary tumor resection, and the right ear tympanic membrane incision was performed under the microscope.

Conclusions: Clinicians need to be cautious and consider the causes in order to reduce missed diagnosis and misdiagnosis, and provide early diagnosis and early treatment to improve the quality of life of patients.

Objective

Secretory otitis media(SOM) is a middle ear non-suppurative inflammatory disease which is characterized by middle ear effusion and hearing loss without acute otitis symptoms and signs[1], and it is often as the first symptom of certain diseases, so it is very easily misdiagnosed. The following is an analysis of the cases of pterygopalatine tumors with the first diagnosis of secretory otitis media.

Clinical Datas

The patient, male, 27 years old, was admitted to the hospital because of "right ear boring with hearing loss for 1 month". Before the hospital, he underwent the treatment of tympanic incision and eustachian tube balloon expansion with simple secretory otitis media, but still recurrent. Specialized examination: Electronic nasopharyngeal + electronic ear endoscope shows: bulging at the right pharyngeal recess, right ear tympanic membrane is yellow-colored, and effusion in the tympanic cavity (Figure A, Figure B). Acoustic impedance: right ear B-curve, left ear A-curve; Pure tone audiometry: left ear air conduction speech frequency is 18dB, bone conduction speech frequency is 13dB, bone air conduction accompanied by; right ear air conduction speech frequency is 33d.B, bone conduction speech frequency is 13dB, and the bone conduction is 20dB.Sinus computed tomography (CT): Soft tissue density mass in the right axillary fossa (Figure C). Nasopharyngeal Magnetic resonance imaging (MRI) scan + enhanced indication: The T1 long T2 signal mass was seen in the right axillary fossa, and the enhanced scan showed uneven signal enhancement in the tumor (Figure D, Figure E, Figure F), Therefore, it has further

clarified the cause of recurrent episodes of secretory otitis media in this patient because of the tumor lesions in the pterygopalatine fossa,so under the general anesthesia, the navigation system assisted the endoscopic sinus combined with the cryo-plasma wing axillary tumor resection, and the right ear tympanic membrane incision was performed under the microscope. Postoperative pathological reward is (Right pterygopalatine fossa) fusiform interstitial tumor, combined with immunohistochemical staining results and morphological features to support schwannomas. Immunohistochemical staining results: H-Caldesmon(-), SMA(-),CD34(-), Desmin(-), Ki67(positive rate1%)，S-100(+),β-Catenin (cytoplasm +), Vimentin (+). Postoperative close follow-up, good recovery, no recurrence.

Discussion

Secretory otitis media(SOM) is a common disease in the otology.The main symptoms of adult patients are ear suffocation and tinnitus. The main features are tympanic effusion and conductive sputum.It is often due to eustachian tube dysfunction and middle ear mucosal secretion disorders. Clinically, some of the above symptoms and signs will occur in the early stage of some disease and are easily misdiagnosed as secretory otitis media. Therefore, for adults, unilateral secretory otitis media should be highly alert to nasopharyngeal lesions. This case is an adult patient, secretory otitis media is recurrent, eustachian tube balloon dilatation and myringotomy catheterization were performed before. The postoperative period was good,but the symptoms of secretory otitis media appeared again in the postoperative period. Therefore, during the routine preoperative examination, the patient was found to have bulging at the right pharyngeal recess. the sinus CT and the MRI were scanned and enhanced. The results showed that the patient had a space-occupying lesion in the right axilla. The pterygopalatine is a small but important anatomical gap in which nerve vessels travel. The primary tumor of the pterygopalatine is mainly nasopharyngeal angiofibroma and schwannomas, which are rare. Schwannoma originates from peripheral nerve sheath Schwann cells, grow slowly, having a complete envelope and a clear boundary. It usually grows expansively around the nerve, and the nerve bundle does not enter the inside of the tumor [2], it can occur in all parts of the body, most of which occur in the head and neck (25% to 45%) [3], which is rare in the ear, nose and throat (4%). In this case, nasal endoscopy combined with navigation system was used during operation, improving the accuracy and safety of surgery. At the same time, CT and MRI are routine preoperative examinations, which are helpful for diagnosis and differential diagnosis. It can provide an important basis for preoperative diagnosis of pterygopalatine schwannomas [4].

Treatment of schwannomas: Schwannomas are not sensitive to radiotherapy and chemotherapy. And when the nasal schwannomas are found, such as nasal congestion, eyeball protrusion, facial changes and other corresponding compression or occupying symptoms, the body and psychological damage to the patient, so the treatment of nasal schwannomas is mainly surgery [5]. The purpose of the surgery is to completely remove the lesion and relieve the symptoms caused by schwannomas. For the superficial vestibular, nasal and other superficial schwannomas can be directly treated with tumor resection, such

schwannomas are easy to find early, the tumor is small, the position is superficial and the operation is simple [6].

With the development of endoscopic techniques and the improvement of surgical techniques, the use of a planing knife to gradually remove sinus intraspinal schwannomas under nasal endoscopy has become an important method for the treatment of schwannomas. This method can effectively avoid the facial appearance damage caused by conventional open surgery, and at the same time can reduce the economic burden of the patient, and the patient is more acceptable. However, for large schwannomas located in the maxillary sinus, since the endoscopic surgery cannot ensure that the space of the maxillary sinus is clearly seen, the risk of incomplete surgical resection is greatly increased, and the schwannomas located in the maxillary sinus to the axillary fossa are completely removed. The lesion is difficult, so the choice of surgical methods should be combined with imaging examination to determine the location and size of the tumor and choose simple endoscopic surgery or open surgery. In this case, the patient recovered well after surgery and no recurrence.

Through the diagnosis and treatment of patients in this case, the etiology of secretory otitis media is more complicated, especially for adults. Our clinicians need to be cautious and consider the cause in many aspects. In particular, attention should be paid to nasopharyngeal lesions or even pterygopalatine fossa and even inferior orbital fossa lesions. By combining relevant imaging examinations, early diagnosis and early treatment are given to improve the quality of life of patients with missed diagnosis and misdiagnosis.

Abbreviations

CT: computed tomography; MRI: Magnetic resonance imaging; SOM: Secretory otitis media

Declarations

Ethics approval and consent to participate

I certify that this manuscript is original and has not been published and will not be submitted elsewhere for publication while being considered by Diagnostic Pathology. And the study is not split up into several parts to increase the quantity of submissions and submitted to various journals or to one journal over time. No data have been fabricated or manipulated (including images) to support your conclusions. No data, text, or theories by others are presented as if they were our own.

The submission has been received explicitly from all co-authors. And authors whose names appear on the submission have contributed sufficiently to the scientific work and therefore share collective responsibility and accountability for the results.

Consent for publication

Written informed consent was obtained from each patient for publication of this report and any accompanying images.

Availability of data and materials

The datasets used or analysed during the current study are available from the corresponding author on reasonable request.

Competing interests

The authors declare that they have no competing interests.

Funding

Having no fundings.

Authors contributions

Yue Liu, Yan LIU, Xue Zhao and Xian Hai Guo participated in the histopathological evaluation, performed the literature review and drafted the manuscript. Yue Liu and Dan Yu conceived and designed the study, Dan Yu revised the manuscript for important intellectual content. All authors read and approved the final manuscript.

Acknowledgements

Thanks are due to Xue Zhao for assistance with collecting the imagings and to Dan Yu for valuable discussion.

References

1. Erdoglija M，Sotiroviu J，Baletiu N，Early postoperative complications in children with secretory otitis media after tympanostomytube insertion in the Military Medical Academy during 2000—2009，J，. Vojnosanit Pregl，2012，69 (5) : 409-413，
2. Ducatman BS，Scheithauer BW，Piepgras DG,et al. Malignant peripheral nerve sheath tumors，A clinicopathologic study of 120 cases，Cancer,1986,57，2006-2021.
3. SERHROUCHNI K I,CHBANI L,HAMMAS N,et al.Two rare schwannomas of head and neck[J].Diagn Pathol,2014,9:27-27.
4. SHIMAMOTO H,CHINDASOMBATJAROEN J,KAK IMOTO N,et al.Perineural spread of adenoid cystic carcinoma in the oral and maxillofacial regions:evaluation with contrast-enhanced CT and MRI[J].Dentomaxillofac Radiol,2012,41:143-151.
5. WANG B X,YUAN J J,CHEN X W,et al.Extracranial non-vestibular head and neck schwannomas[J].Saudi Med J,2015,36:1363-1366.

6. MINHASRS,THAKURJS,SHARMA DR.Primary schwannoma of maxillary sinus masquerading as malignant tumor[J].BMJ Case Rep,2013.pii:bcr 2013009267.

Figures

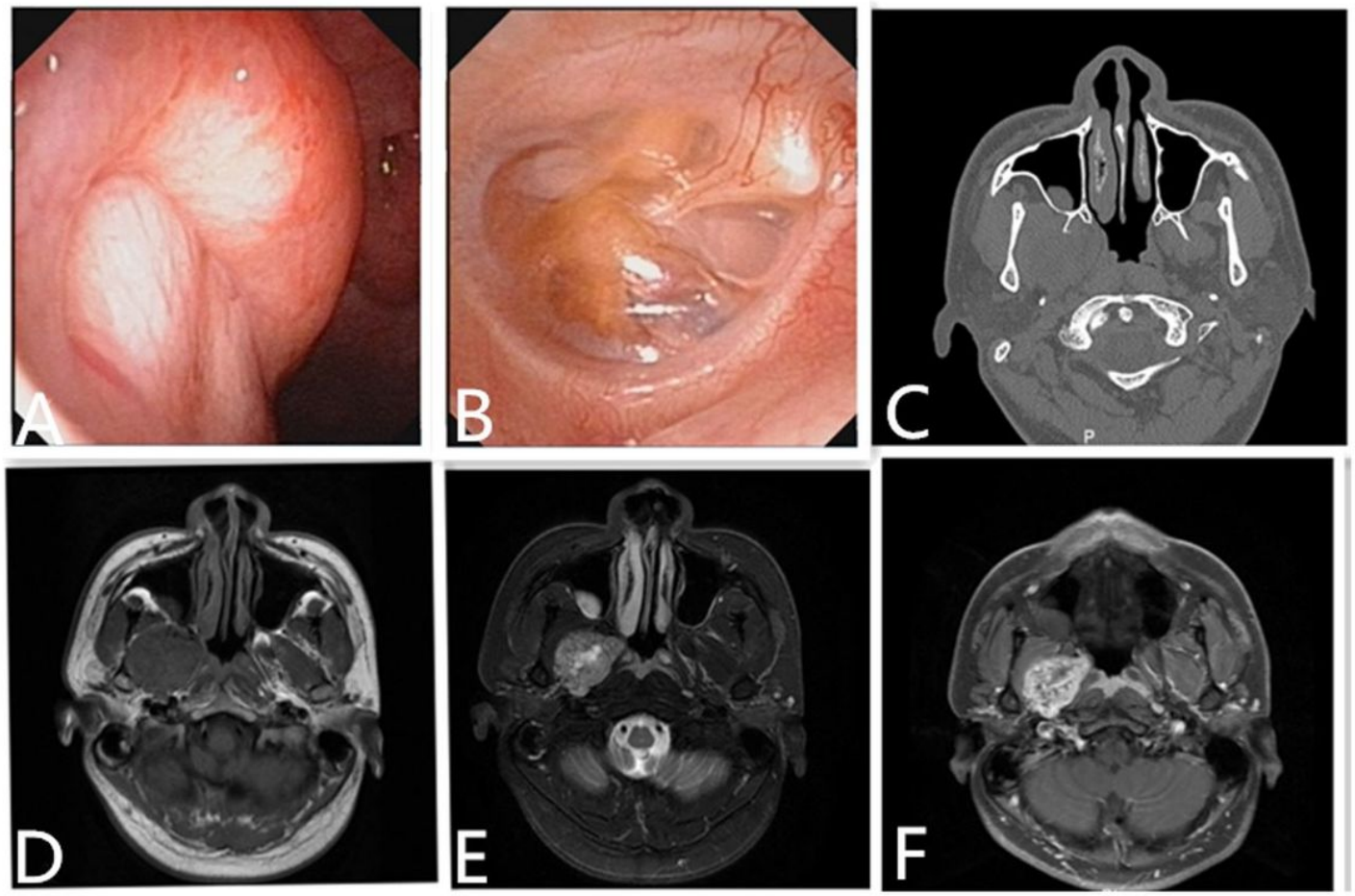

Figure 1

A. Electronic nasopharyngeal shows: bulging at the right pharyngeal recess.B. Electronic ear endoscope shows: right ear tympanic membrane is yellow-colored, and effusion in the tympanic cavity.C. Sinus CT: Soft tissue density mass in the right axillary fossa.D□E□F: Nasopharyngeal MRI scan + enhanced indication: The T1 long T2 signal mass was seen in the right axillary fossa and the enhanced scan showed uneven signal enhancement in the tumor.

Supplementary Files

This is a list of supplementary files associated with this preprint. Click to download.

- carechecklist.jpg