

CASE REPORT

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Automastoidectomy — a case report

Khalid Mahmoud Sayed Seedahmed^{1*} , Tareq A. Y. Abujabal² and Fatima Ayed Akoud³

Abstract

Background Automastoidectomy denotes extensive destruction of the middle ear cavity and the mastoid air cells, mimicking the appearance of a reminiscent image of the post-mastoidectomy cavity. This condition, although rare, might occur as a unique complication of chronic otitis media with cholesteatoma with subsequent destruction of the posterior wall of the external auditory canal and spontaneous partial or complete evacuation of the cholesteatoma through the canal.

Case presentation Seventy-year-old gentleman, a retired soldier, presented to us in the ENT OPD with right ear pain for more than a year, right ear discharge for 9 months, and a decrease in the hearing of the right ear for 6 months. The condition started 18 months ago with intermittent right otalgia; Dull aching in nature. Ten months later, the patient started to experience right-sided otorrhoea which was profuse, offensive, mucopurulent, and yellowish in color. Later on, he noticed a gradually deteriorating hearing.

On examination of the right ear, there is a fleshy mass obstructing the EAC, no auricular deformity tenderness, no preauricular swelling, sinus, or deformity, and there is thinning of the skin in the right postauricular region with mild tenderness but no swelling or sinus and preserved sulcus. Otosopic examination shows a mass obstructing the EAC found to be an everted skin tag from the posteroinferior wall of the canal. There was a widening of the canal with the destruction of the walls and the absence of the TM, the annulus tympanicum, and the ossicles with polypoidal mucosa all over the middle ear cavity.

Investigation HRCT scan of the temporal bone shows destruction of the air cells of the right mastoid cavity with the absence of the ossicles and destruction of the posterior EAC walls.

Conclusion Although uncommon it is considered to be a known complication of Cholesteatomatous otitis media and sometime keratosis obturates with the main feature of osteogenic destruction of the posterior wall of the EAC.

Keywords Automastoidectomy, Cholesteatoma, Keratosis obturans

Background

Automastoidectomy denotes extensive destruction of the middle ear cavity and the mastoid air cells, mimicking the appearance of a reminiscent image of the cavity appearing after radical mastoidectomy [1]. This condition, although uncommon, might occur as a unique

complication of chronic otitis media with cholesteatoma with subsequent destruction of the posterior wall of the external auditory canal and spontaneous partial or complete evacuation of the cholesteatoma through the canal [2]. In such circumstances, it is often referred to as mural cholesteatoma or unusual cholesteatoma shell, as there is no residual soft tissue mass [3]. It had been also reported to occur with keratosis obturans [4].

Case presentation

Seventy-year-old gentleman, a retired soldier, presented to us in the ENT OPD with right ear pain for more than a year, right ear discharge for 9 months, and a decrease in the hearing of the right ear for 6 months. The condition

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started 18 months ago with intermittent right otalgia; Dull aching in nature. Ten months later, the patient started to experience right-sided otorrhoea which was profuse, offensive, mucopurulent, and yellowish in color. Later on, he noticed a gradually deteriorating hearing, with no tinnitus or vertigo. He also reported a history of left-sided hearing loss 5 years ago with no history of ear discharge or pain on the left side. No history of headache, fever, neck stiffness, or projectile vomiting. He is Not known to be diabetic or hypertensive and has no chronic illness. No history of trauma, hospitalization, or surgeries.

On examination of the right ear, obviously, there is a fleshy mass obstructing the EAC, no auricular deformity tenderness, no preauricular swelling, sinus or deformity,



Fig. 1 A mass obstructing the EAC which was found to be an everted skin tag from the postero-inferior wall of the canal

there is thinning of the skin in the right postauricular region with mild tenderness but no swelling or sinus and preserved sulcus. Otoscopic examination shows a mass obstructing the EAC found to be an everted skin tag from the posteroinferior wall of the canal (Fig. 1). There was a widening of the canal with the destruction of the walls absence of the TM, the annulus tympanicum, and the ossicles with polypoidal mucosa all over the middle ear cavity.

The other ear’s examination was unremarkable. There was no facial nerve palsy, –ve fistula. Rinne test: –ve in both ears, Weber test: centralized, no palpable neck masses.

Investigation

The pure tone audiogram showed mild conductive loss on the left side, while the right ear had severe conductive hearing loss with an air–bone gap of 40–50 dB (Fig. 2).

Swab for microbiology culture and sensitivity cultivated heavy growth of *E. coli*.

HRCT scan of the temporal bone shows destruction of the air cells of the right mastoid cavity with the absence of the ossicles and destruction of the posterior EAC walls. The presence of air in the mastoid cavity may be used as evidence that the cholesteatoma, either in its part or entirety, has gone out (Fig. 3).

Plan of treatment

The patient is admitted to the hospital and started a ceftazidime injection with regular toilet suction of the ear with regular instillation of antibiotic+steroid ear drops. The patient was planned for mastoid exploration but he did not show up for a follow-up visit and contact was lost with him.

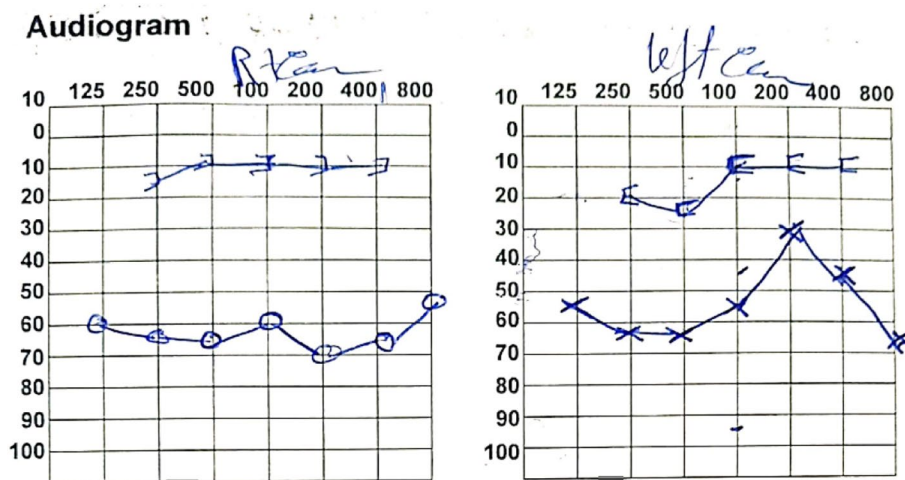


Fig. 2 Pure tone audiogram shows mild conductive loss on the left side (30 dB), while the right ear had severe conductive hearing loss with an air–bone gap of 40–50 dB

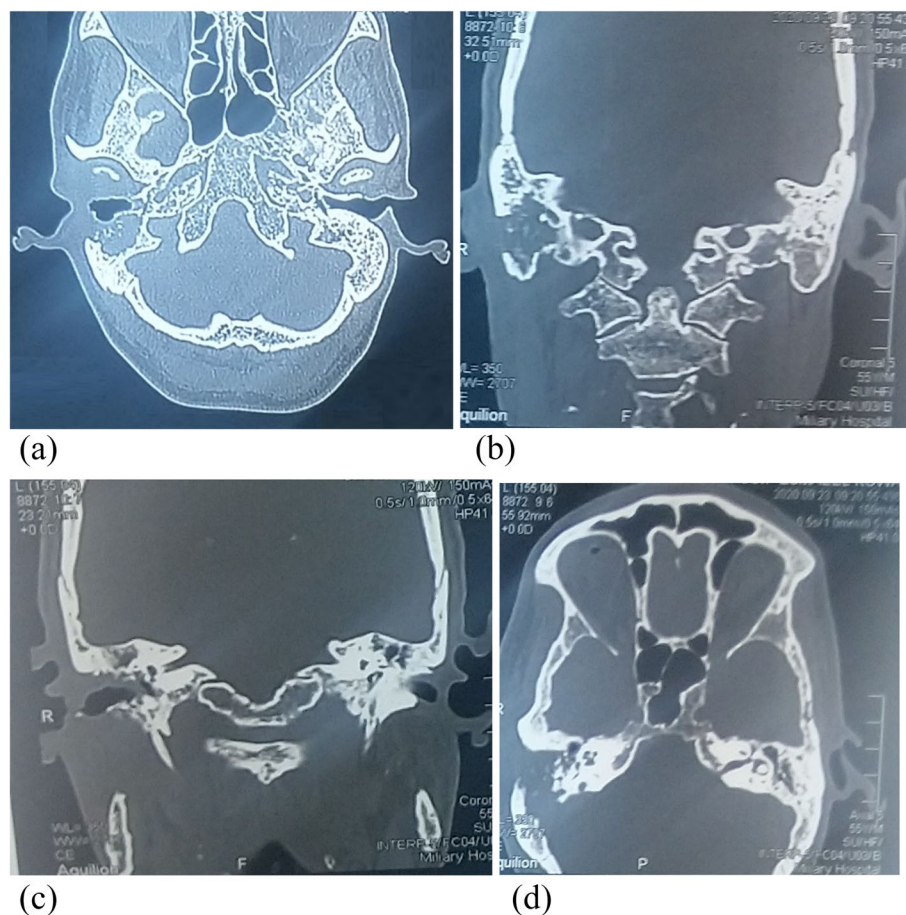


Fig. 3 HRCT–temporal bone–axial and coronal cuts show the automastoidectomy cavity with the destruction of all the air cells boundaries on the right side and erosion of the posterior wall of the right EAC. Courtesy of Dr. Fatima Ayed Akoud – ENT Registrar Sudan Medical Specializations Board

Discussion

In a patient with a chronic middle ear infection within compliance to medication or reluctance to follow up, with a chronic medical illness or simply negligence; automastoidectomy may occur as a consequence of cholesteatomata's mass digging its way out through the posterior canal wall with subsequent partial or complete shedding or evacuation of the culprit destructive mass. In such cases, a meticulous study of an HRCT–temporal bone is always crucial and the need to go for exploratory mastoidectomy is usually thought of as cholesteatoma debris may still nest silently in the mastoid cavity.

Conclusion

Although uncommon, it is considered to be a unique complication of cholesteatomatous otitis media which hypothetically resolved spontaneously with the main feature of osteogenic destruction of the posterior wall of the EAC through which the cholesteatomatous debris may shed off.

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Authors' contributions

K.M. wrote the abstract, background, case report, investigation, discussion, and conclusion, and T. A. contributed to the manuscript revision and clinical opinion. F.A. provided the initial clinical history and the examination findings and also provided the radiological images. All authors read and approved the final manuscript.

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Availability of data and materials

Available on demand in the form of an SPSS file.

Declarations

Ethics approval and consent to participate

Ethics approval and consent to participate were approved by the research committee of the ENT Specialty Council – Sudan Medical Specializations Board (SMSB). No reference number was allocated to be provided here. Informed written consent was obtained from the patient to participate in this

case reporting. The confidentiality issue was intentionally considered. Participation was voluntary. The participant has the right to withdraw at any stage.

Consent for publication

Written informed consent for publication of the clinical details and clinical images was obtained from the patient. The patient agreed upon the fact that text and any pictures published in the article will be freely available on the internet and may be seen by the general public. The pictures and text may also appear on other websites or in print, may be translated into other languages, or used for commercial purposes.

Competing interests

The authors declare that they have no conflict of interest.

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