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What is your diagnosis?

Soft swelling of the external auditory canal

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1. Case report

A 20-year-old man complained of a 3-months left ear fullness with mild hearing loss. Otoscopy revealed a soft swelling of the posterior wall of the external auditory canal (EAC); the tympanic membrane appeared normal. Pure-tone audiometry revealed a mild left sided conductive hearing loss on low and high frequency. Computed Tomography (CT) scan demonstrated a downward displacement of posterosuperior skin of the EAC by an air pocket connected to mastoid air cells through an extensive bony defect along the posterosuperior aspect of the EAC (Fig. 1).

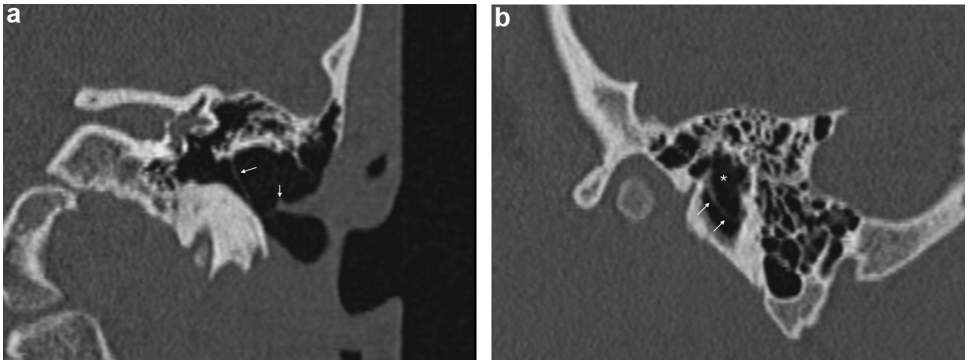

Fig. 1. a: CT scan, coronal section of the left petrous temporal bone showed a downward displacement of the posterosuperior skin of the EAC (arrow) by an air pocket connected to mastoid air cells; b: sagittal section image demonstrated an extensive bony defect along the posterosuperior aspect of the EAC (asterisk).

What is your diagnosis?

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2. Answer

The patient underwent a mastoidectomy which confirmed the radiological diagnosis of pneumatocele; the erosion was repaired with bone pâté and temporal fascia. The patient had a routine postoperative course and 1 year later remains asymptomatic with normal pure-tone audiometry.

3. Discussion

Pneumatocele is an extraosseous gas collection, contained by adjacent soft tissues, outside the confines of an abnormal sinus or air cell [1–3]. Pneumatocele may develop spontaneously or after infection, cholesteatoma, or temporal bone surgery [4]. The differential diagnosis in the presence of swelling of the EAC include inflammatory process/abscess, neoplasm, cholesteatoma. The pathogenesis of spontaneous pneumatoceles of the temporal bone is not clear. These lesions may occur intracranially or extracranially and can be related to the developmental abnormality of a bone defect at the level of the EAC or tympanomastoid and tympanosquamous suture. Minor barotrauma, such as vigorous nose-blowing, coughing or the Valsalva maneuver may have a rule in the pathogenesis [1–3]. Pneumatocele of the temporal bone may produce symptoms in relationship with its extension or localization as hearing loss, tinnitus, or aural fullness [5].

Ethical statement

This case report was performed under the Parma University Research Ethics Board guidelines for case reports. No formal research ethics board approval was necessary and therefore no reference number was generated. Consent was obtained from the patient in writing.

Financial disclosure

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Disclosure of interest

The authors declare that they have no competing interest.

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