

Petrous apex cholesterol granuloma

[Cholesterol granuloma](#) is a benign mass that commonly involves the petrous apex but rarely affects other structures, such as the mastoid cavity.

Diagnosis

CT: homogeneous & isodense; rim enhancement; extensive destruction of petrous bone.

MRI: increased signal on both T1WI and T2WI

Usually extradural, especially near the [petrous apex](#). Bone destruction is common.

Treatment

[Petrous apex cholesterol granuloma treatment](#)

Case series

Goldofsky et al. reviewed 14 cholesterol cysts of the temporal bone, emphasizing the importance of preoperative imaging and surgical approach. Use of magnetic resonance imaging differentiates cholesterol cysts from cholesteatoma or other neoplasms. Computed tomography delineates the location of the lesion and defines temporal bone anatomy essential to surgical approach. The two studies together allow the surgeon to properly plan drainage, as in the case of a cholesterol cyst, versus excision or exteriorization, as in the case of cholesteatoma. The infralabyrinthine approach to a petrous apex cholesterol cyst is the procedure of choice when hearing preservation is desired ¹⁾.

Case reports

Two cases of petrous apex cholesterol granuloma (PACG) treated with an endoscopic transsphenoidal approach. Vestibular functions of the two patients were evaluated quantitatively by video Head Impulse Test (vHIT) and/or vestibular evoked myogenic potentials (VEMPs).

Patients: Two patients with PACG who experienced episodes of dizziness are presented.

Intervention: An endoscopic transsphenoidal approach to PACG.

Main outcome measure: The preoperative and postoperative vestibular functions as evaluated by vHIT and VEMP.

Results: Two cases of PACG were treated by a transsphenoidal approach. The internal auditory canal was compressed by the PACG in both cases. The patients both experienced episodes of dizziness

before surgery and preoperative vestibular testing including vHIT and VEMP indicated dysfunction of vestibular nerves. After surgery, their symptoms were completely resolved, and the vestibular testing results were improved.

This article is noteworthy for being the first to publish quantitative vestibular function testing for patients with PACG with vestibular dysfunction. PACG may show various symptoms, with dizziness being one of the most common symptoms. In cases in which the internal auditory canal is compressed by the PACG, vestibular functions should be evaluated by vHIT and VEMP. In the present cases, [dizziness](#) was found to be resolved by surgery to release the compression on internal auditory canal. Based on the present cases, the transsphenoidal approach is considered to be both safe and effective

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1)

Goldofsky E, Hoffman RA, Holliday RA, Cohen NL. Cholesterol cysts of the temporal bone: diagnosis and treatment. *Ann Otol Rhinol Laryngol*. 1991 Mar;100(3):181-7. PubMed PMID: 2006815.

2)

Fujiwara Y, Fujiwara K, Motegi H, Ishi Y, Morita S, Hoshino K, Fukuda A, Nakamaru Y, Homma A. Quantitative Evaluations of Vestibular Function in Patients With Petrous Apex Cholesterol Granulomas Treated With an Endoscopic Transsphenoidal Approach: A Report of Two Cases. *Otol Neurotol*. 2023 Jul 18. doi: 10.1097/MAO.0000000000003961. Epub ahead of print. PMID: 37464454.

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Last update: **2024/06/07 02:54**

