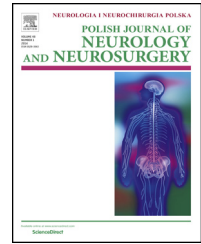


Available online at [www.sciencedirect.com](http://www.sciencedirect.com)

ScienceDirect

journal homepage: <http://www.elsevier.com/locate/pjnns>

## Case report

# Endoscopic transsphenoidal surgery using pedicle vascularized nasoseptal flap for cholesterol granuloma in petrous apex: A technical note

Yukitomo Ishi, Hiroyuki Kobayashi, Hiroaki Motegi\*, Shogo Endo, Shigeru Yamaguchi, Shunsuke Terasaka, Kiyohiro Houkin

Department of Neurosurgery, Hokkaido University Graduate School of Medicine, Japan

## ARTICLE INFO

## Article history:

Received 2 March 2016

Accepted 10 August 2016

Available online xxx

## Keywords:

Cholesterol granuloma

Petrous apex

Transsphenoidal surgery

Endoscope

Nasoseptal flap

## ABSTRACT

**Background:** Compared with surgical resection, endoscopic transsphenoidal surgery (TSS) for cholesterol granuloma (CG) in the petrous apex (PA) is associated with local recurrence due to obstruction of the drainage route. We present a detailed procedure of an endoscopic TSS using pedicle vascularized nasoseptal flap (PVNF).

**Methods:** A 40-year-old woman with a history of repeated surgery for left tympanitis was referred to our institution. Neurological examination revealed severe hearing loss in the left ear. Radiologic examination presented a round mass in the left PA and significant fluid collection in the mastoid air cells of the left temporal bone. CG was strongly suspected, and endoscopic TSS using PVNF was performed. Prior to endoscopic drainage, a PVNF was harvested from the mucosa of the ipsilateral nasal septum, with an attempt to preserve the sphenopalatine artery in the flap. Following this, puncture and adequate irrigation of the lesion was performed by endoscopic TSS, with neuro-navigation system assistance; the apex of PVNF was then placed into the lesion to prevent the obstruction of the drainage route. An absorbable polyglycolic acid sheet and fibrin glue were applied on the flap to prevent spontaneous deviation from the lesion.

**Results:** The patient was discharged without any further neurological complications. Eight-month postoperative computed tomography images showed no recurrence; the drainage route was patent and the fluid collection in the left mastoid air cells was resolved. Moreover, hearing loss was improved.

**Conclusions:** Endoscopic TSS using PVNF may be one of available surgical options for PACG.

© 2016 Polish Neurological Society. Published by Elsevier Sp. z o.o. All rights reserved.

\* Corresponding author at: Department of Neurosurgery, Hokkaido University Graduate School of Medicine, North 15 West 7, Kita-ku, Sapporo 060-8638, Japan. Fax: +81 011 708 7737.

E-mail addresses: [nekozamurai@me.com](mailto:nekozamurai@me.com) (Y. Ishi), [hiro-ko@med.hokudai.ac.jp](mailto:hiro-ko@med.hokudai.ac.jp) (H. Kobayashi), [moccihiro@yahoo.co.jp](mailto:moccihiro@yahoo.co.jp) (H. Motegi), [du\\_en03\\_05@yahoo.co.jp](mailto:du_en03_05@yahoo.co.jp) (S. Endo), [syamama1945@gmail.com](mailto:syamama1945@gmail.com) (S. Yamaguchi), [terasas@med.hokudai.ac.jp](mailto:terasas@med.hokudai.ac.jp) (S. Terasaka), [houkin@med.hokudai.ac.jp](mailto:houkin@med.hokudai.ac.jp) (K. Houkin).

**Abbreviations:** CG, cholesterol granuloma; CT, computed tomography; MRI, magnetic resonance imaging; PA, petrous apex; PACG, petrous apex cholesterol granuloma; PVNF, pedicle vascularized nasoseptal flap; SPA, sphenopalatine artery; TSS, transsphenoidal surgery.

<http://dx.doi.org/10.1016/j.pjnns.2016.08.006>

0028-3843/© 2016 Polish Neurological Society. Published by Elsevier Sp. z o.o. All rights reserved.

## 1. Introduction

Cholesterol granuloma (CG) in the petrous apex (PA) is a rare and benign neoplasm caused by foreign body giant cell reaction to cholesterol deposits, with associated fibrosis and vascular proliferation [1]. Patients presenting with symptoms, such as dizziness, pressure sensation, tinnitus, hearing loss, otalgia, or headache, are treated by surgery, but the optimal surgical strategy is still controversial [2]. Direct resection using a middle fossa approach would yield relatively few recurrences, but it is quite invasive and has a risk of severe postoperative complications [3–6]. Recently, many reports on endoscopic transsphenoidal surgery (TSS) for PACG drainage have been published [7–26]. Although it is a less invasive approach, the frequency of recurrence is high compared with direct resection. Therefore, the surgery for PACG is aimed at less invasiveness and lower recurrence.

Here, we present the endoscopic TSS for PACG using pedicle vascularized nasoseptal flap (PVNF), with an objective of lower recurrence.

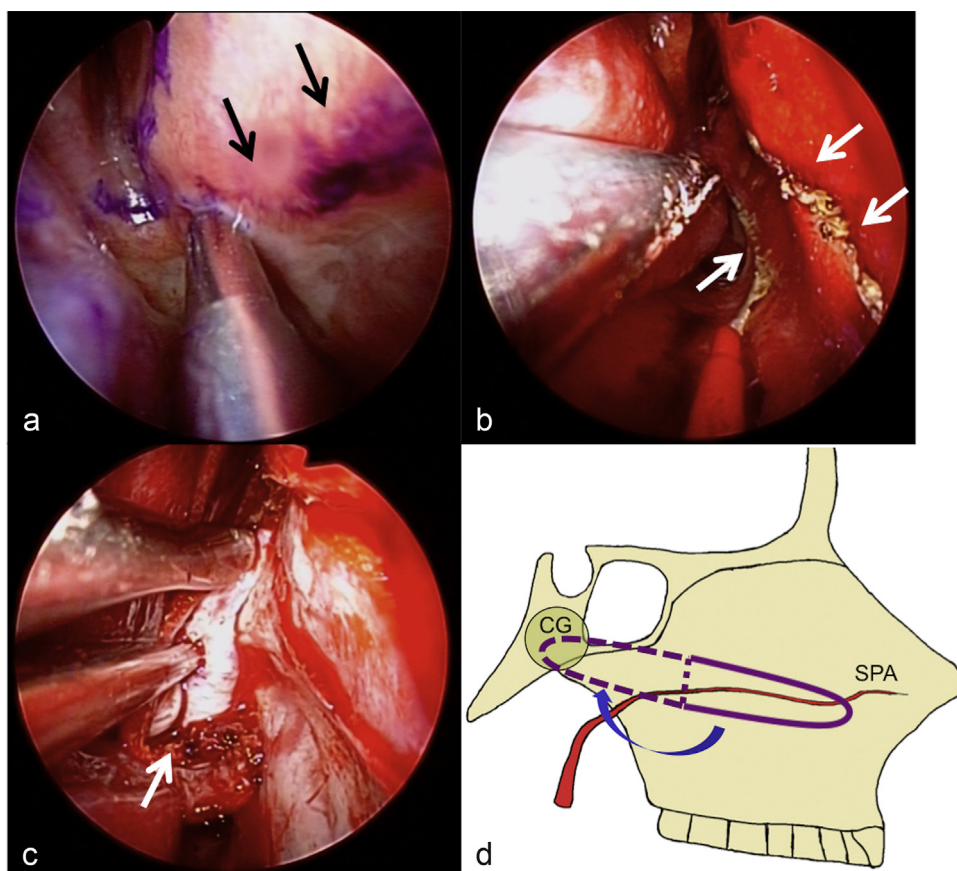
## 2. Materials and methods

### 2.1. Surgical indication for endoscopic TSS

Preoperative magnetic resonance imaging (MRI) and computed tomography (CT) are quite important to assess whether TSS is suitable, based on the location of the lesion, anatomy of the sphenoid sinus and nasal septum, and the positional relationship between the lesion and normal structures, such as the petrous portion of the internal carotid artery (ICA). If it is difficult to access the lesion by TSS, another approach should be considered.

### 2.2. Harvesting of PVNF

Prior to endoscopic drainage, a PVNF is harvested from the mucosa of the ipsilateral nasal septum, with an attempt to preserve the sphenopalatine artery (SPA), in order to obtain a well-vascularized flap. Doppler blood flow meter is sometimes useful to confirm the route of SPA (Fig. 1A). A strip pedicle flap surrounding the SPA is separated from the nasal septal



**Fig. 1 – (a) Confirming the route of SPA (black arrows) by Doppler blood flow meter. (b) The strip pedicle mucoseptal flap (white arrow) surrounding SPA is trimmed using monopolar scalpel. (c) The flap (white arrow) is dissected from the nasal septum. (d) Schematic image of endoscopic TSS for PACG using PVNF. The pedicle flap surrounding the SPA is placed into the lesion.**

Download English Version:

<https://daneshyari.com/en/article/8457538>

Download Persian Version:

<https://daneshyari.com/article/8457538>

[Daneshyari.com](https://daneshyari.com)