

# Epidermoid Cysts of the Cerebellopontine Angle

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## ABSTRACT

**Objectives:** 1.) Review the clinical presentation, radiologic characteristics, and treatment options for epidermoid cysts of the cerebellopontine angle (CPA).

2.) Review the operative management and long-term results for 17 patients with epidermoid cysts of the cerebellopontine angle.

**Methods:** Retrospective chart review of surgically treated CPA epidermoids at a tertiary care medical center. Cases were performed by two surgeons between July 1988 and July 2008. All cases were reviewed for presenting symptoms, radiographic findings, surgical approach, completeness of resection, and complications.

**Results:** Chart review identified 17 patients. The most common symptom at diagnosis was tinnitus, followed by sensorineural hearing loss, vertigo, facial pain, and headache. Physical exam revealed facial hypesthesias in 3 patients, facial paresis in 2 patients, while 14 patients had no physical exam findings on presentation. MRI studies of all patients revealed lesions which are isodense with brain on T1, brighter on T2, and do not show contrast enhancement. Surgical approaches included retrosigmoid, translabyrinthine, or combined. The most common complication was profound SNHL, followed by temporary cranial nerve 7 paresis, CSF leak, and recurrent disease.

**Conclusions:** Epidermoid cysts are relatively rare lesions of the CPA, with symptoms mimicking those of acoustic neuromas but with unique MRI findings. Transtemporal surgical approaches for epidermoid cysts of the CPA allowed for total resection in 17/17 patients, with long-term disease-free incidence of 15/17 or 88.2%.

## INTRODUCTION

Epidermoid cysts of the cerebellopontine angle (CPA) are a rare finding. The vast majority of CPA tumors are acoustic neuromas (*fig 1*), which make up ~90% of these masses. Meningiomas are the next most common CPA mass at roughly 5% incidence, followed by epidermoid cysts which make up 2% of all CPA masses.

Epidermoid cysts are pearly tumors (*fig 2*), also known as primary cholesteatomas. They are made up solely of epithelial tissue. It is thought that spillage of these tumors intraoperatively can result in recurrence. They are slow growing and most commonly present with gradual neurologic symptoms.

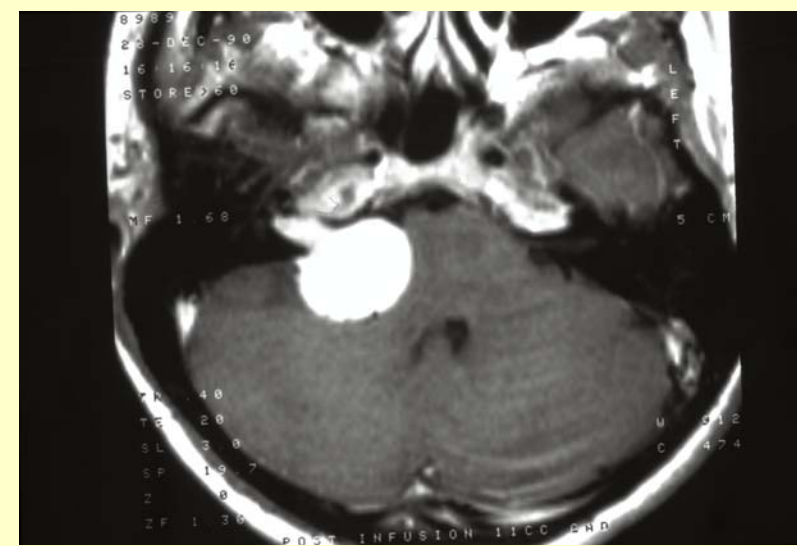


Figure 1 - T1 MRI Acoustic neuroma.



Figure 2 – Intraoperative Epidermoid Cyst

## METHODS AND MATERIALS

The objective of this study is to present the clinicoradiologic features, operative management, and long-term results for 17 patients with CPA epidermoids.

A retrospective chart review was undertaken. The charts of all patients with surgically treated CPA epidermoid cysts at Loyola University Medical Center between July 1988 and July 2008 were reviewed.

## RESULTS

17 patients were identified. There were 9 females and 8 males, ranging in age from 39 to 68 years. The mean age at presentation was 46.2 years. Clinical, radiologic, and pathologic features are reviewed below.

### Clinical Presentation:

Symptoms	No.	Signs	No.
Tinnitus	11	Facial hypesthesia ( <i>Fig 3</i> )	3
SNHL	9	Facial paresis	2
Vertigo	4	None	14
Facial Pain	2		
Headache	2		
None	3		



Figure 3 – Facial Hypesthesia

### Radiologic Features:

**MRI:** Lesions are isodense with brain on T1, brighter on T2, and show little contrast enhancement (*Fig 4*)

Size	No.
0 - 20 mm	2
21- 40 mm	8
41 - greater	7

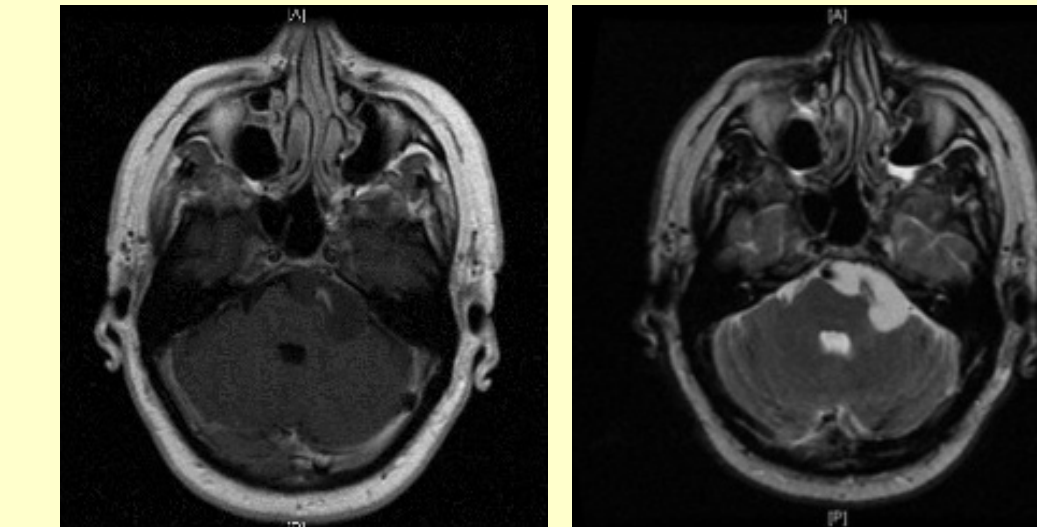


Figure 4 – T1 Axial MRI

T2 Axial MRI

### Pathologic Features

Epidermoids originate from epithelial rests within the temporal bone or CPA. They consist of stratified squamous epithelial linings surrounding desquamated keratin. They have abundant anucleate squamulae, regular maturation of their epithelial layer, and an absence of dermal appendages (*Fig 5*)

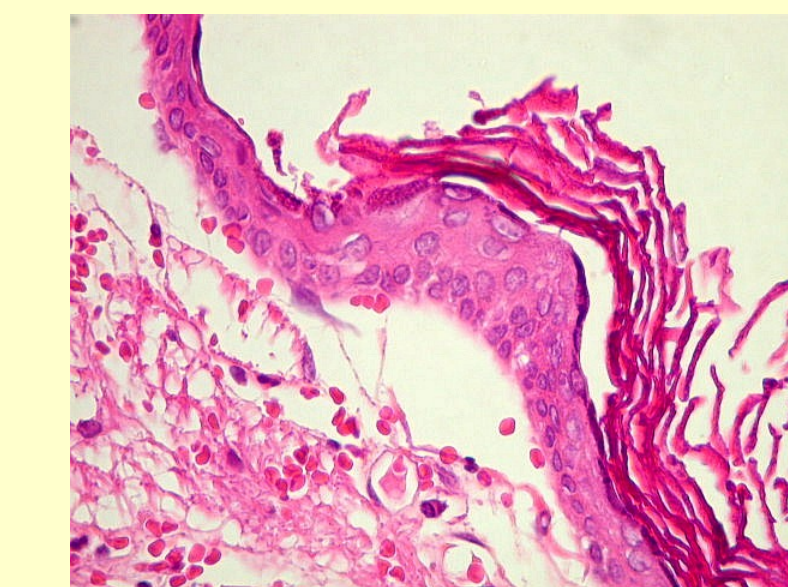


Figure 5 – Epidermoid histology

### Complications

Profound SNHL	4/11	36%
Temporary Cr VII	3/15	20%
Transient Cr VI	1/17	6%
CSF leak	1/17	6%
Recurrent disease	2/17	12%

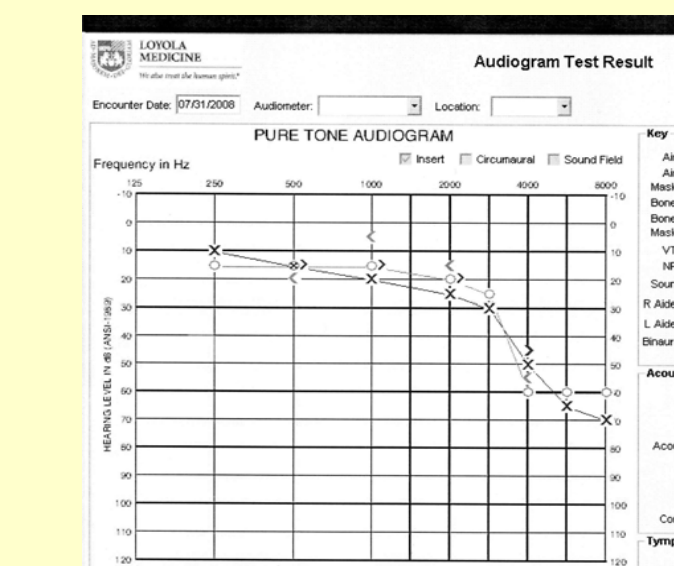


Figure 6 – Post-operative audiogram

## SURGICAL TECHNIQUE

Of the 17 patients reviewed, 11 underwent a retrosigmoid resection, 4 underwent a translabyrinthine approach, and 2 patients had a combined approach. The decision on what approach to use was based on tumor location, pre-operative hearing, and surgeon preference. Some intraoperative photos are displayed below. (*Fig 7-8*)

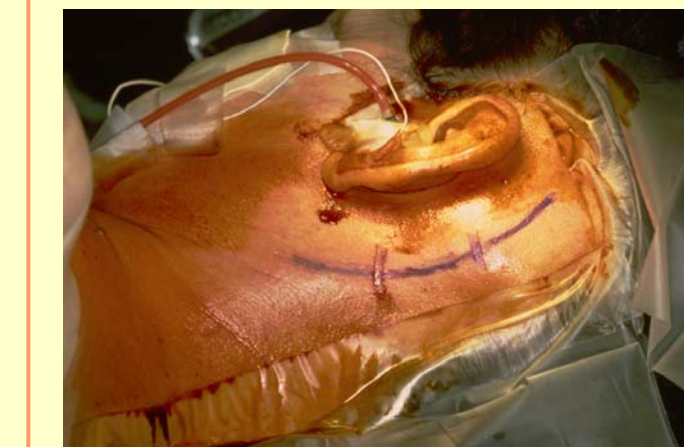


Figure 7 – Retrosigmoid incision

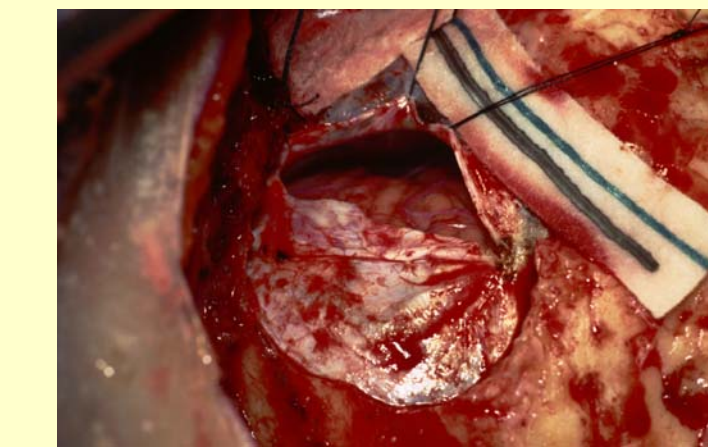


Figure 8 – Retrosigmoid approach

## CONCLUSIONS

In summary, epidermoid cysts of the CPA are relatively rare lesions. Their symptoms mimic those of acoustic neuromas, although they have unique MRI features which distinguish them. They typically present at a young age in our series (46.2 years).

Transtemporal approaches allowed for total resection in 17/17 patients with long term disease-free incidence of 15/17 or 88.2%

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