

Neurosurgical Management and Quality of Life in Patients with Petrous Apex Cholesterol Granuloma

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BACKGROUND

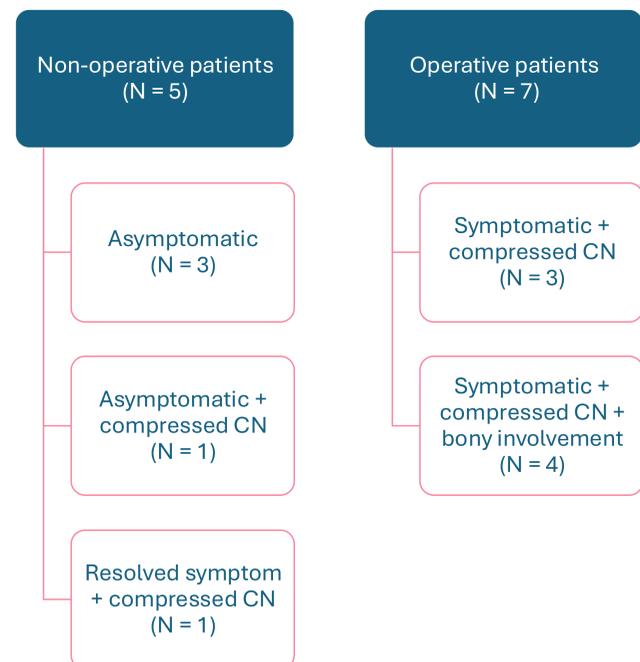
- Cholesterol granulomas are rare, benign cysts in the petrous apex with a prevalence of 6 in 100,000 people
- Clinical presentation can range from asymptomatic patients to those experiencing cranial nerve sixth palsy, headache, hearing loss, tinnitus, vertigo and facial nerve palsy
- There is a gap in our understanding of how this pathology should be managed
- Our goal was to provide a neurosurgeon's narrative on his experience with cholesterol granulomas with a focus on patients' quality of life to help inform clinical decision making

METHODS

- We conducted a retrospective chart review of cholesterol granuloma cases managed by a single neurosurgeon at Vancouver General Hospital between 2000 and 2025
- We analyzed the patient demographics, tumor characteristics, clinical presentation, treatment results and 36-Item Short form Health Survey (SF-36) quality-of-life questionnaires

RESULTS

Demographics (N = 12)	
Age, median (range)	43 (32-61)
Sex, male (%)	10 (83%)
Common comorbidities, n (%)	
Smoking history	7 (58%)
Diabetes	4 (33%)
Dyslipidemia	2 (17%)
GERD	2 (17%)
Common presenting symptoms, n (%)	
Dizziness	6 (50%)
Asymptomatic	4 (33%)
Cranial nerve six palsy	4 (33%)
Sensory changes	4 (33%)
Radiological findings of cholesterol granuloma, n (%)	
Intact cranial nerves	3 (25%)
Compression of cranial nerves	5 (42%)
Destruction of osseous structures	4 (33%)
Other radiological findings, n (%)	
Mucous retention cyst	3 (25%)
Arachnoid cyst	1 (8%)
Maxillary mucosal thickening	1 (8%)



- The average preoperative size of the lesion was 20mm (14 - 26mm) for non-operative patients versus 23mm (15 - 34mm) in operative patients
- For surgically treated patients, the follow-up visit with repeat SF-36 survey took place 1-2 months post-op in 5/6 patients versus 9 years post-op in the remaining one patient

OR Details

- All surgically treated patients underwent temporal craniotomy with intraoperative monitoring +/- zygomatic osteotomy +/- condylar fossa

OR Outcomes

- All surgically managed patients reported symptom resolution post-operatively
- The size of the lesion was unchanged in 4 patients versus significantly reduced in 3 patients

QoL Surveys

- All operatively managed patients reported less bodily pain ($p = 0.026$) and emotional toll ("feeling worn out"; $p = 0.026$) post-operatively, which in turn enhanced their ability to spend more time on work or physical activities ($p = 0.026$) and accomplish tasks previously affected by emotional problems ($p = 0.046$)
- All surgically managed patients reported a higher score for their overall health being "excellent" ($p = 0.026$)

CONCLUSION

- Our study demonstrates operative management as a clinically meaningful option for symptomatic patients with cholesterol granuloma, as evidenced by symptom resolution and quality-of-life improvement
- In our study, patients were offered surgery if they had persistent symptoms with radiological evidence of mass effect and/or bony involvement

