ABSTRACT

Objectives: We give an overview of the current state of cerebellopontine angle (CPA) surgery, based on the recent evidence, and describe our center experience in surgical approaches to these lesions.

Methods: Retrospective review of cases who underwent surgery for CPA lesions at our hospital during the last 17 years (1996-2013), with focus on the description of the currently most used technique - extended retrosigmoid. Brief review of the literature on CPA surgery, comparing the different approaches, their indications and complications.

Results: During this period, 203 patients underwent surgery for CPA. The most frequent indication was vestibular schwannoma (84.7%). Other indications were meningiomas (8.4%), epidermoids (1%), vestibular neurilemmomas (1.5%), arteriovenous malformations (1%), PICA/AICA aneurysms (1%), trigeminal microdecompression (0.5%), and other rarer tumors (2%). The most used approach was extended retrosigmoid (71.9%), followed by the translabyrinthine (26.1%) and middle fossa approach (2%). Until 2004, the most used approach was the translabyrinthine; after 2004, the most used was the extended retrosigmoid.

Conclusions: Currently, the preferred surgical approach used by our team is extended retrosigmoid, because it allows a complete exposition of the sigmoid sinus from the transverse sinus to the jugular bulb, enhances CPA vision, avoids cerebellar retraction and is a simple way to get a wide route to the CPA. It also allows good functional outcomes (hearing and facial nerve preservation) in most cases. However, indications for approaches depend on the size of the lesion, its location and the quality of preoperative hearing, being necessary familiarity with all approaches.

INTRODUCTION

About 10% of all intracranial tumors involve the cerebellopontine angle (CPA) and the vast majority of these are vestibular schwannomas, accounting for 70-90%.1

The most common surgical approaches to the CPA lesions are retrosigmoid (RSM), translabyrinthine (TL) and middle fossa (MF).2-6

The extended retrosigmoid is a simple and safe modification of the traditional RSM approach, that increases the exposure of the CPA and avoids cerebellar retraction.2-4 Such modification results from a limited mastoidectomy and skeletonization of the sigmoid sinus.

METHODS

Retrospective review of cases who underwent surgery for CPA lesions at our hospital during the last 17 years (1996-2013). These surgeries were performed by ENTs and neurosurgeons. Our currently most used technique is the extended RSM, described briefly below (Fig. 1-3).

RESULTS

Between 1996 and 2013, 203 patients underwent surgery for CPA.

The most frequent indication was vestibular schwannoma (84.7%). Other less common indications are displayed in Chart 1.

The most used approach was extended RSM in 71.9% of cases, followed by the TL and MF approaches (Chart 2).

Until 2004, the most used approach was the TL; after 2004, the most used was the extended RSM.

The main results of our patients with vestibular schwannoma who underwent extended RSM surgery were:

○ Preservation (House-Brackmann grade I-II) of their long-term functional hearing (>1 year postoperative) in all cases except in the larger (Koos grade 4) tumors (Table 1).

○ Complications:
  • CSF leak (6.3%)
  • Persistent dizziness (5.1%) and headache (3.8%)
  • IX, X or XI nerve palsy (3.8%)
  • Meningitis (1.3%)
  • Cerebellar edema (1.3%)
  • Cerebellar hemorrhage with death (1.3%)

CONCLUSIONS

Currently, the preferred surgical approach used by our team is extended RSM, because:

• It allows a complete exposition of the sigmoid sinus from the transverse sinus to the jugular bulb
• Enhances CPA vision
• Avoids cerebellar retraction
• It is a simple way to get a wide route to the CPA
• It also allows good functional outcomes (hearing and facial nerve preservation) in most cases

However, indications for approaches depend on the size of the lesion, its location and the quality of preoperative hearing, being necessary familiarity with all approaches.

REFERENCES


