شبكة المعلومات الجامعية

بسم الله الرحمن الرحيم

شبكة المعلومـــات الجامعية

التوثيق الالكتروني والميكروفيلم

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جامعة عين شمس

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شبكة المعلومات الجامعية

بعض الوثائق الأصلية تالفة

بالرسالة صفحات

لم ترد بالأصـــل

APPROACHES TO INTERNAL AUDITORY CANAL

ESSAY

Submitted for partial fulfillment of
Master degree in
GENERAL SURGERY

BY

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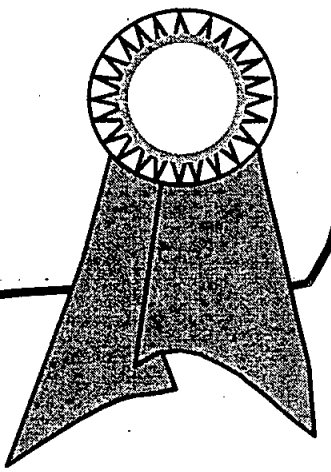
First and foremost thanks to God, the most beneficent and merciful.

I dedicate this Essay To
My parents and My Cousin Abd El-Kader
For all they did
To them I owe everything



Introduction

Diagnosis and treatment of cerebellopontine lesions have long proven challenging . They produce different symptoms and signs and diagnosis is difficult based on clinical findings alone .
Until recently, radiographic imaging of this area has been limited . Once diagnosed, these lesions have been difficult to approach surgically with access limited by bone and important neurovascular structures .
However, with advances in imaging and surgical techniques they are now more easily diagnosed and approached more safely and successfully .
In today's era of advanced microsurgical techniques complete tumor removal with preservation of vital structures is routine in all but the largest tumors . *(Mark et al., 1995)* .

The **aim** of this study is to review the surgical approaches to the internal auditory canal and cerebelloponetin angle.

First, a review of the microsurgical anatomy of the region of the internal auditory canal and cerebellopontine angle.

Second, a review of the pathology of the cerebelloponetin angle lesions with clinical presentation, investigations and differential diagnosis of lesions in this area is presented.

Finally, based on the above two items the different surgical approaches to the internal auditory canal and cerebellopontine angle are discussed, with the advantages and disadvantages of each one and how to choose the most appropriate approach.

Microsurgical Anatomy

An understanding of microsurgical anatomy of the internal auditory canal and cerebellopontine angle provides the basis for optimizing surgical results with the cerebellopontine angle lesions.

The internal auditory canal:

This is a short canal, nearly 1cm in length and lined with dura, which passes into the petrous bone in a lateral direction from the cerebellopontine angle. It is closed at its outer lateral end, or fundus, by a plate of bone which is perforated for the passage of nerves and blood vessels to and from the cranial cavity.The meatus transmits the facial, cochlear and vestibular nerves and the internal auditory artery and vein.

Although various authors, having used different techniques for measurement, report dissimilar dimensions, on average the vertical diameter of the meatus in 90% of normal subjacts lies between 2mm and 8mm, with an average of about 4.5mm, and the difference between the two sides in an individual does not exceed 1mm. The average length of the posterior wall is 8mm, and the difference between the two sides does not exceed 2mm.

The bony plate separating the fundus from the middle and inner ears has a transverse crest on its inner medial surface. This is the crista falciformis and it separates a small upper region from a larger lower area. Above the crest and anteriorly is the opening of the facial canal carrying the facial nerve. This is separated, by a small vertical ridge (Bill's bar), from the posterior region which transmits the superior vestibular nerve through several small foramina to the superior and lateral semicircular canals, to the

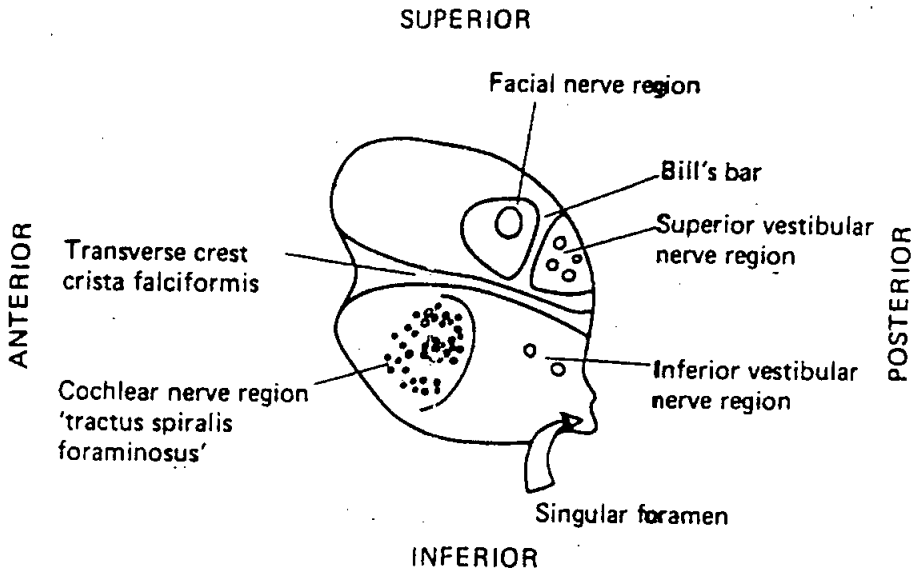


Fig.1: The right internal auditory meatus, viewed along its axis and from the posterior cranial fossa. (Anthony, 1986)