Vestibular Neurectomy

Essay

Submitted In The Partial Fulfillment of The Master Degree of Otorhinolaryngology

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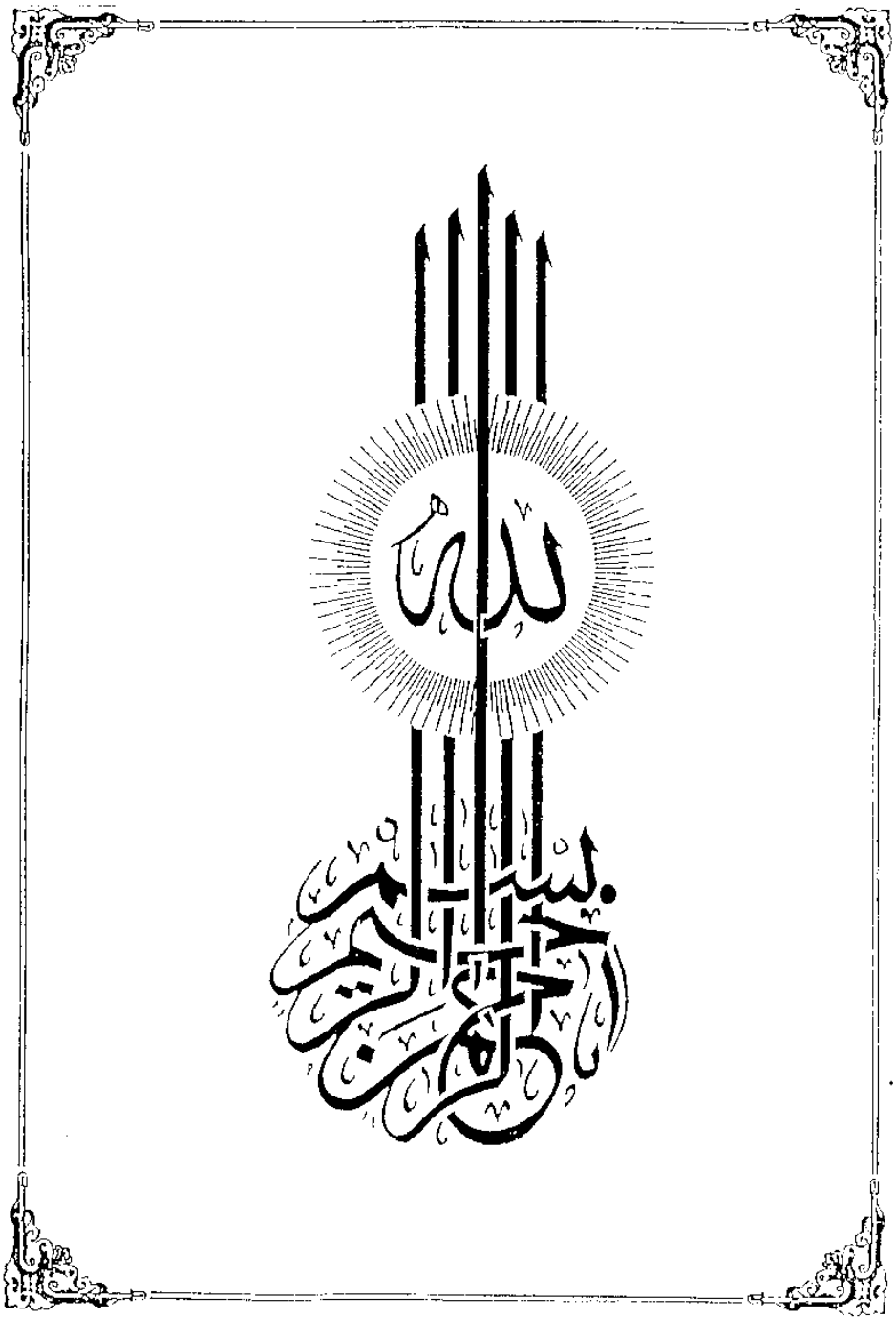

" قالوا سبحانك لا علم لنا إلا ما علمتنا
إنك أنت العليم الحكيم"

"صدق الله العظيم"

البقره الأيه ٣٢

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To My Family

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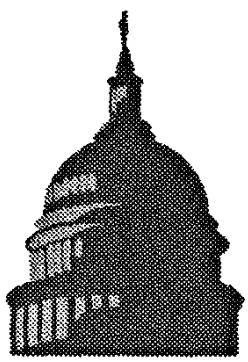


Introduction And Aim Of The Work

Introduction

Division of the eighth cranial nerve for intractable vertigo was first described by ***Parry in 1904***. ***Charles Frazier, (1929)*** was the first to perform an eighth nerve section via the posterior fossa to relieve the symptoms of aural vertigo in a patient with Meniere's disease ***(Dandy, 1933).***

Anatomic dissection of the eighth cranial nerve by ***Mckenzie in 1930*** permitted him to do the first selective section of the vestibular nerve by the suboccipital route preserving the cochlear nerve in 117 patients ***(Mckenzie, 1936).***

In ***1932 Dandy*** began to perform the selective vestibular nerve section by the translabyrinthine route for a variety of vertiginous disorders. His series of 624 procedures is the longest in the world literature ***(Green, 1958)***. These procedures were performed without the use of microsurgical techniques and instrumentations. Half of Dandy's patients underwent a total eighth nerve section and approximately 10% experienced a permanent facial paralysis. Although the procedure boasted excellent control of vertigo, it was not widely accepted because of the magnitude of complications.

Following Dandy's death in 1946, the vestibular nerve section fell into disuse. It was replaced by the destructive transmastoid labyrinthectomy originally popularized by the English otologist ***Terence Cawthorne in 1943*** as another treatment for Ménière's disease. By the 1950s, labyrinthectomy

and endolymphatic sac surgery had replaced vestibular nerve section as the surgical procedure of choice for intractable peripheral vertigo. Both operations were more appealing than a craniotomy to the otolgic community ***(Silverstein, 1990).***

In ***1961***, ***William House*** described a microsurgical extradural approach to the internal auditory meatus through the middle fossa. Via this approach the superior vestibular nerve could be exposed and sectioned. Because of the poor control of vertigo with this procedure, ***Fish and Glasscock (1977)*** modified it to include sectioning of the inferior vestibular nerve and excision of Scarpa's ganglion. This modification yielded excellent control of vertigo with preservation of hearing in many cases.

In ***1972, Hitselberger and Pulec*** described the retrolabyrinthine approach for sectioning the trigeminal nerve in the posterior fossa. The procedure was further modified by ***Brackman and Hitselberger in 1978***, to allow for a variety of posterior fossa operations. In 1978 during the removal of a glossopharyngeal neurilemmoma through the posterior fossa, ***Silverstein*** noticed the close proximity of the eighth nerve complex to the dural opening. More important, he noticed a well delineated cleavage plane between the vestibular and the cochlear constituents of the nerve ***(Silverstein, 1980)***. Gross and microscopic laboratory studies confirmed that vestibular nerve section can be performed routinely through the posterior fossa.

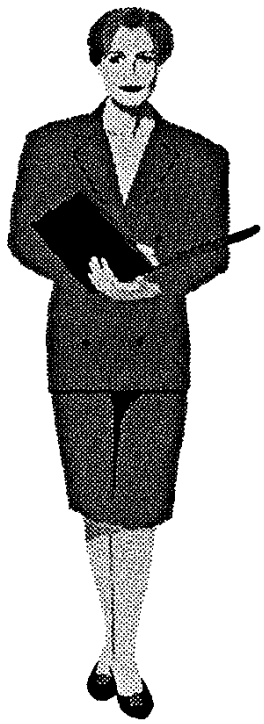
Retrolabyrinthine exposure offered excellent exposure to the cerebellopontine angle with minimal traction over the cerebellum. Since its introduction, posterior fossa vestibular nerve section, including the retrolabyrinthine approach and its subsequent modifications, the retrosigmoid internal auditory canal approach and the combined retrolabyrinthine-retrosigmoid approaches have become the most popular means of selective vestibular nerve section ***(Silverstein, 1990).***

The commonest diagnosis in cases requiring vestibular neurectomy is Ménière's disease, and as the pathogenesis remains elusive, the treatment is therefore only symptomatic.

Aim of the Essay:

The aim of the present essay is to review the current literature and update the subject of vestibular neurectomy. To acheive this goal, the following protocol was carried out:

1. Review of macor and micro anatomy of the VIIIth cranial nerve.
2. Review of the physiology of balance.
3. Critical review of the indications of vestibular neurectomy.
4. Discussion of the various approaches for selective vestibular neurectomy
5. Evaluation of the results of such surgery
6. Discussion of the possible complications of such surgery
7. A suggested scheme for selection of patients to undergo such surgery according to data collected in this review.



Chapter I:

Anatomy Of The Vestibular Nerve