THE ROLE OF THE VENTRICULOSCOPE IN THE SURGICAL TREATMENT OF SOLID INTRAVENTRICULAR TUMOURS

Thesis
Submitted for Partial Fulfillment of Master Degree in General Surgery

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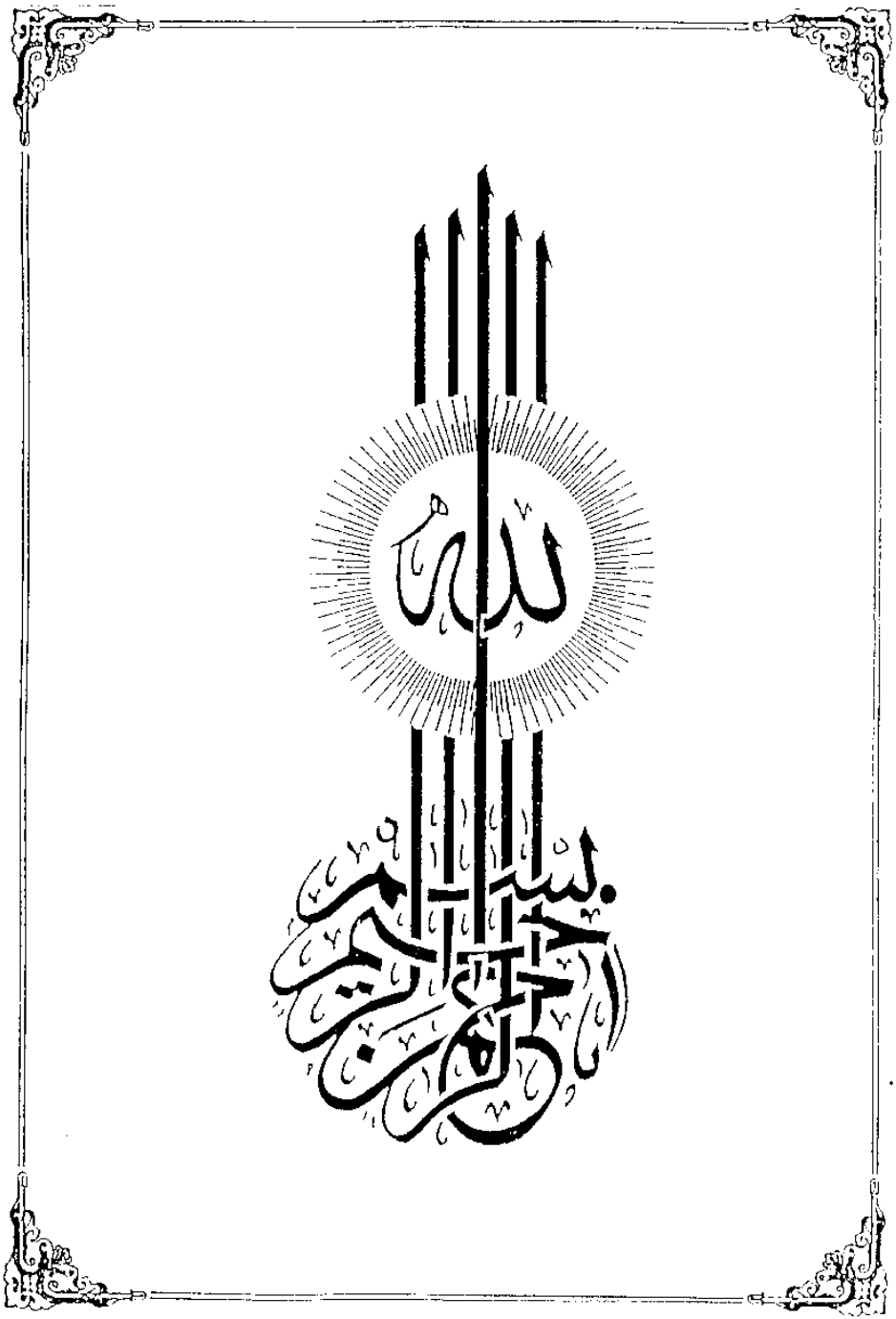

بسم الله الرحمن الرحيم

قُلْ بِفَضْلِ اللَّهِ وَبِرَحْمَتِهِ فَبِذَلِكَ فَلْيَفْرَحُوا

صدق الله العظيم

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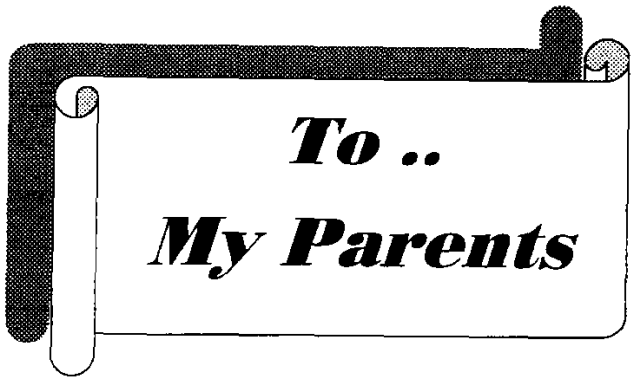

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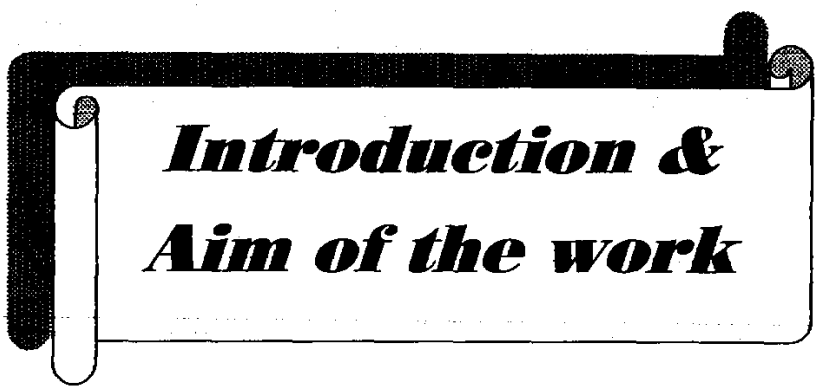

Introduction

Neuroendoscopy is a relatively new area of interest in neurosurgery. The largest neuroendoscopy experience has been gained through applications in pediatric neurosurgery because of the use of this technology in the management of hydrocephalus ***(Cohen, 1993).***

Uses of neuroendoscopy are expanding rapidly into other areas, including assisted craniotomy, surgery for tumors, aneurysms, vascular malformations, intracerebral hemorrhage, peripheral nerves and the spine ***(Agee et al;1995).***

Tumours that originate within the ventricular system of the brain or appear at its surface represent a major neurosurgical challenge. These lesions located deep inside the brain must be approached a remarkable distance through normal brain tissue, eloquent cortical regions should be considered in designing the surgical route of tumour access. Dissection and brain retraction must be kept at a minimum to avoid damage to important brain structures such as the thalamus, caudate nucleus, fornix and so on ***(Gaab and Schroeder, 1993)***

Intraventricular lesions are commonly managed by microsurgery . Advances in the development of operative instruments, microscopes and approaches for example transcallosal and intraventricular, have considerably reduced morbidity and mortality. However, in defined cases the neuroendoscopic approach is superior to microsurgery ***(Lewis et al; 1994)***

The approach through a burr hole is less invasive and brain retraction can largely be avoided ***(Schroeder et al;1996).***

Aim of the work

The aim of this work is to evaluate the role of the ventriculoscope in the surgical treatment of solid intraventricular tumours of the brain.

We will construct a model that is a human cadaveric skull that has been opened to introduce different masses within a container filled with fluid to act as a ventricular system harbouring a solid tumour. Through a burr hole in the skull, we will use the ventriculoscope in attempt to remove the tumour piecemeal. The time needed to remove a certain volume (calculated by volumetric studies[5]) of a tumour taken from a patient underwent surgery will be considered. The tumours will be of different pathologies and consistencies. This study will be conducted in ten cases.