

Endoscopic Management of Intraventricular Extension of Intracerebral Hemorrhage

Thesis

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Abstract

Key Words : endoscope ,external ventricular draiage
,intraventricular ,haemorrhage , intracerebral haemorrhage

We use endoscope the in cases of intraventricular haemorrhage extended from intracerebral haemorrhage as regard safety , efficiency , and efficacy in comparison to usage of external ventricular drainage as a treatment for intraventricular haemorrhageand we found that endosope was superior than external ventricular drainage in our study.

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List of Abbreviations	
AVM	Arteriovenous malformation
CBF	Cerebral blood flow
CPP	Cerebral perfusion pressure
EVD	External ventricular drainage
FDV	Flow deficit volume
FFP	Fresh frozen plasma
GCS	Glasgow coma scale
H	hydrocephalus
ICH	intracranial hemorrhage
ICP	Intracerebral pressure
IPH	Intraparenchymal hemorrhage
IVF	Intraventricular Fibrinolysis
IVH	Intraventricular hemorrhage
IVHS	Intraventricular hemorrhage score
LV	lateral ventricle
MAP	Mean arterial pressure
PIVH	Peri and intraventricular hemorrhage
PVH	Periventricular hemorrhage
RV	Right ventricle

VP	Ventriculo-peritoneal
SICH	Spontaneous intracerebral hemorrhage

Introduction

Spontaneous intracerebral haemorrhage (SICH) is responsible for 10-15% of the acute stroke. The common causes of SICH are hypertension, aneurysm, arteriovenous malformation (AVM), and vasculopathies. Hypertensive bleeding occurs mainly in putamen, near ruptured aneurismal site with or without subarachnoid haemorrhage, or at the site of AVM, while bleeding due to angiopathy is usually lobar. **(Swamy, 2007)**

An intraventricular hemorrhage, often abbreviated "IVH," is a bleeding into the brain's ventricular system, where the cerebrospinal fluid is produced and circulates through towards the subarachnoid space. It can result from physical trauma or from hemorrhage in stroke. **(Hanley, 2009)**

Brain hemorrhage is the most severe of the major stroke subtypes. Extension of the hemorrhage into the ventricles could occur in 40% of spontaneous ICH cases, could happen early or late in the sequence of events. Epidemiological data demonstrate that the amount of blood in the ventricles relates directly to the degree of injury and likelihood of survival. Secondary tissue injury processes related to intraventricular bleeding can be reversed by removal of clot in animals. Specific benefits of clot removal include limitation of inflammation, edema, and cell death. Restoration of cerebral spinal fluid flow, intracranial pressure homeostasis, improved consciousness, and shortening of intensive care unit stay represent the other benefits that occur from clot removal. Limited clinical knowledge exists about the benefits of intraventricular hemorrhage (IVH) removal in humans, because organized attempts to remove blood have not been undertaken in large clinical trials on a generalized scale. **(Annibale and Hill, 2007)**

The primary hematoma and disease process are probably of more significance than the IVH. However, prognosis is also determined by the extent of the hemorrhage. Headache, vomiting, confusion, decreased level of consciousness and, in the case of secondary bleeding, hemiparesis, are common clinical findings. The clots tend to disappear within 2 weeks. **(Cedars-Sinai, 2009)**

Introduction

Recent CT studies suggest that IVH is more frequent than previously suspected, but it is often not significant clinically. When clots are symptomatic, intraventricular drainage (possibly bilateral) may be useful, but the blood often occludes catheters used for this purpose. **(Edward Feldmann, et al, 2005)**

Neuroendoscopic management of severe IVH in patients was safe, efficiently reduced the amount of ventricular blood and ventricular dilatation, and effectively produced an outcome profile that compares very favorably with other more conventional treatments. **(Longatti, et al, 2004)**

Aim of work

To identify the beneficial of usage of neuroendoscope in cases of intraventricular hemorrhage extended from intracerebral hemorrhage as regard safety, efficiency, and efficacy in comparison to usage of external ventricular drainage as a treatment for intraventricular hemorrhage.

Anatomy

Ventricles of the Brain

The lateral ventricles, the 1st and 2nd ventricles, are the largest cavities of the ventricular system and occupy large areas of the cerebral hemispheres. Each lateral ventricle opens through an interventricular foramen into the 3rd ventricle. (Fujii, et al 2002)

The 3rd ventricle is a slit like cavity between the right and left halves of the diencephalon, is continuous posteroinferiorly with the cerebral aqueduct, a narrow channel in the midbrain connecting the 3rd and 4th ventricles. (Fujii, et al, 2002)

The pyramid-shaped 4th ventricle in the posterior part of the pons and medulla extends inferoposteriorly. Inferiorly, it tapers to a narrow channel that continues into the cervical region of the spinal cord as the central canal. (Fujii, et al, 2002)

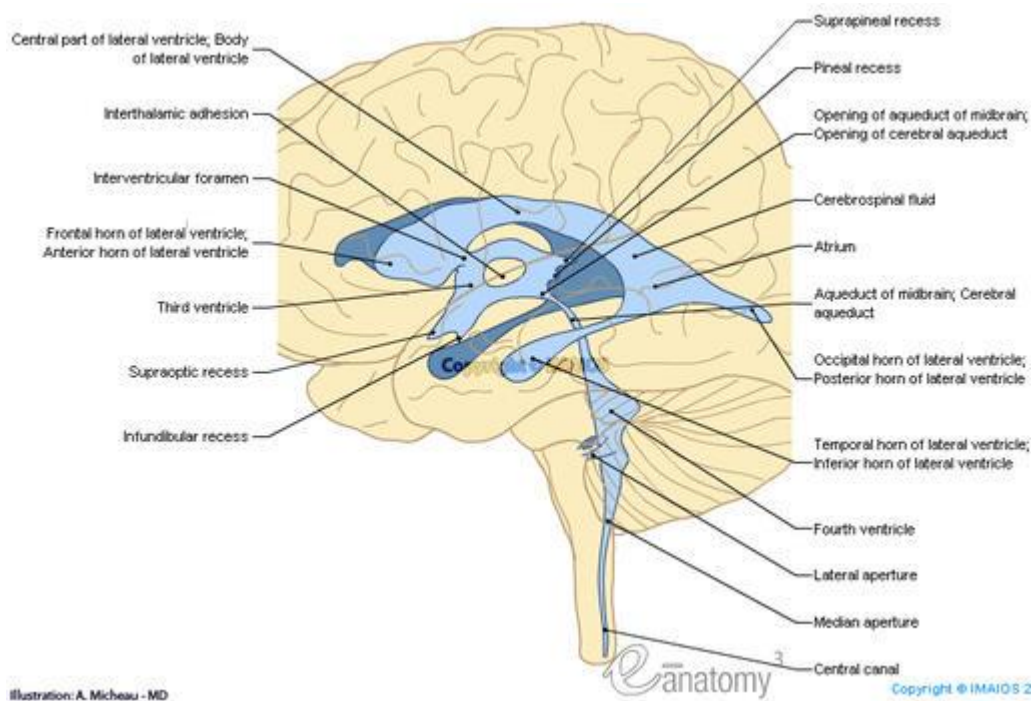


Figure 1: diagram show ventricular system (Fujii, et al, 2002)