Introduction

The real development of endoscopy began from modern times, though people have attempted to observe cavities of human body for advancing their knowledge of diseases for a long time (Lu et al., 2002).

Endoscopy is well established in several specialties such as cranial and spinal endoscopy, laparoscopy, gastroscopy, colonoscopy, thoracoscopy and bronchoscopy (Antonio, 1998).

Ventriculoscopy and neuroendoscopy had their beginnings in the early part of the twentieth century, when neurosurgeons were motivated by a desire to control hydrocephalus (Walker, 2001).

Various methods of endoscopy have evolved into accepted diagnostic and therapeutic adjuncts of modern neurosurgery. However, at the end of the 20th century, endoscopes can be regarded as some of the most important instruments for the development of micro neurosurgery into the 3rd millennium (Fries and Perneczky, 1999).

Important principle of surgery is understanding the anatomy- the same applies for endoscopic surgery. However, the field of view is significantly limited through the endoscope. and the surgeon must recognize anatomical structures while seeing only a portion of their whole (John and Charles, 1998).

The development of the neuroendoscope has allowed neurosurgeons to visualize anatomic structures deep within the nervous system with minimal disruption of the critical overlying structures (Liu et al., 2004).

Two types of endoscopes are used : the rigid & flexible endoscopes. The rigid endoscope has better resolution and easier operability than the flexible fiber endoscope; however, it has restricted mobility and the visual field is limited. A mini caliber flexible ventriculoscope is designed for observation of the third ventricle and superfine fiberscope with advantages of flexibility and durability (Yamakawa, 1995).

The pen-style and disposable scopes are the latest developments in the endoscope field. Video imaging system needs light sources, cameras, image recording devices and monitors (John and Charles, 1998).

A disposable plastic introducer sheath is developed for use with a flexible endoscope during intraventricular procedures. This new introducer sheath may contribute to the increased use of a flexible endoscope in neuroendoscopic procedures (Kubo et al., 2004).

Transendoscopic instruments are available in both disposable and reusable varieties. These instruments as grasping micro forceps, transendoscopic micro scissors, perforating instruments, fenestration augmentation, monopolar, bipolar & laser cautery, irrigation and suction tubes (Bergsneider, 1998).

The formal indications for neuroendoscope are greater in pediatric neurosurgery. In fact, the management of the CSF circulation, and disorders associated with this, together with the identification of tumors using minimally invasive methods, make this technique directly useful for solving these problems. This is most obvious in lesions such as multiseptate complex hydrocephaly, and intraventricular tumors and cysts where it is the first surgical option. In the short term, thanks to improvements in neuro-navigation and frameless stereotaxis, its use will be wider and more precise (Jimenez-Leon and Jimenez-Betancourt, 2003).

Adequate indications for endoscopic operation of intracerebral haemorrhage may be the following; 1) Putaminal haematoma of small-intermediate size, 2) Haematoma situated deep in the brain, e. g., thalamic haemorrhage, 3) Intraventricular haematoma, 4) High-risk patients who cannot tolerate general anesthesia (Nakano et al., 2003).

Safe and effective evacuation of large intracerebral haematomas is possible by using the three-in-one endoscopic device (Bakshi and Banerji, 2004).

Neuroendoscopic-assisted micro neurosurgery occasionally utilizes a narrow surgical corridor to facilitate basilar artery aneurysm clipping (Kato et al., 2002).