EDITORIAL

Importance of endoscopy in brain surgery

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DESCRIPTION

Brain surgery is surgery used to treat problems with the structure of the brain and surroundings. The development of neurosurgery technology demonstrates efforts to reduce surgical trauma to patients. Reduced trauma contributes to better postoperative results. Improved diagnostic imaging not only enables accurate location of lesions, but also accurate determination of the topographical relationship between specific lesions and individual anatomical changes in intracranial structure. This precision diagnostic imaging is used to perform individual surgical interventions *via* so-called keyway access. Keyhole craniotomy is associated with reduced light intensity at the depth of the surgical field and provides a fairly narrow viewing angle. Therefore, the object is directly opposite to the access entrance which is easier to see when compared to the object in the shadow of the microscope beam. These two deficiencies in keyway craniotomy can be compensated for by intraoperative use of a rigid rod lens endoscope that allows easy control of the shaft with a surgical microscope.

Endoscopic Cranial Surgery (ESBS) is a relatively new addition to neurosurgery tools. As with many new approaches, there has been considerable controversy over its value compared to the more traditional approaches to ventral skull base pathology. The initial enthusiasm for new approaches that appear to be less invasive is usually great, but these new technologies require careful research to ensure that widespread application in the best interest of the patients. The authors compare the results of ESBS surgery with Trans-cranial surgery (TCS) and several different medical conditions over two different periods and how the results are over time and checked if it changed. The medical conditions examined were craniopharyngioma, anterior skull base meningioma, olfactory neuroblastoma, chordoma, and chondrosarcoma.

Brain surgery may be performed if there is any brain tumour, bleeding in the brain, blood clots in the brain (craniotomy), weakened blood vessels (repair of cerebral aneurysms) or abnormal blood vessels in the brain (arterio venous malformations), damage to the tissue covering the brain (duramater), brain infection (brain abscess), severe nerve or facial pain (trigeminal neuralgia, arterio venous malformations, etc.), skull fracture, electrons transplanted after intra-cerebral compression Equipment, injuries or strokes that can be caused by hydrocephalus (swelling of the brain), epilepsy, certain brain disorders (such as Parkinson's disease).

The risks of general anaesthesia and surgery are: Response to medication, dyspnea, bleeding, blood clots, and infections. Possible risks of brain surgery includes Blood clots or bleeding in the brain, Seizures, Stroke, Coma, Infections in the brain or skull, Wounds, Brain swelling, and also other functional problems like language, memory, weakness, balance, vision impairment. All these problems may last for a short while or they may not go away. The need for more surgery Endoscope assisted microsurgery like all routine microsurgical procedures is performed with both hands; the endoscope is fixed in its desired position *via* a mechanical arm to the head holder. Because of their superior optical quality and manoeuvrability, only rigid lens scopes are used for endoscope assisted brain microsurgery.

There are five ways of observing the endoscopic and microscopic images at the same time: 1. Observation of the microscopic image through the oculars of the microscope and observation of the endoscopic image on a video screen placed in front of the surgeon, 2. Observation of the microscopic image through the oculars of the microscope and display of the endoscopic image on a head mounted LCD screen, 3. Projection of both microscopic and endoscopic images on one screen in a picture-in-picture mode, 4. Projection of both microscopic and endoscopic images into specially designed microscope oculars, and 5. Transmission of both microscopic and endoscopic images into a head mounted LCD screen.

CONCLUSION

With the knowledge of almost all individual anatomic and patho anatomic details of a specific patient, it is possible to target the individual lesion through a keyhole approach using the particular anatomic windows. Endoscopic-assisted microsurgery for keyhole access is maximally efficient in removing lesions and maximally safe for patients, as intraoperative use of the telescope improves light intensity and display of important anatomical details and can provide minimal invasiveness.

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