Neuroendoscopy

- Simulating Endonasal Endoscopic Skull Base Surgery on Animal Carcasses: A Prospective Observational Study
- The role of neuroendoscopy in treatment of pediatric brain abscesses: case series and systematic review of the literature
- Endoscopic assessment of ventricular anomalies diagnosed by MRI in hydrocephalus associated with myelomeningocele
- Triple sheath neuroendoscopic combination technique for managing complete intraventricular hemorrhage casting in patients with cerebral hemorrhage
- Suprasellar Versus Third Ventricular Cysts: Anatomic and Surgical Considerations
- Exoscopic Supraorbital Keyhole Approach for Skull Base Lesions: An Institutional Experience
- Endoscopic Approach for Colloid Cyst Resection
- The Influence of Endoscopic Techniques on the Exposure Range of the Petroclival Region and the Protection of the Abducens Nerve in the Retrosigmoid Approach: An Anatomical Comparative Study

The term is used basically for all procedures that are performed with the help of endoscopes.

History

Neuroendoscopy History.

Indications

Neuroendoscopy Indications.

Advantages

Endoscopic surgery include better visualization, panoramic vision, and the ability to work around corners. Limitations with endoscopic procedures include proximal blind areas, obstruction in instrument handling due to a narrow corridor, disorientation, frequent lens fogging, loss of depth perception, and difficulty in achieving hemostasis, leading to complications and longer operative time during the learning curve.

Surgeons need to learn endoscopic skills in addition to microsurgical ones to perform microendoscopic procedures properly. Attending live workshops, watching operative videos, visiting various departments, watching an experienced and accomplished endoscopic surgeon, proper case selection, a multidisciplinary team approach, practicing on models, hands-on cadaveric workshops, laboratory training, and simulators can improve results and shorten the learning curve [1)]

Approaches

see Endoscopic approaches.

Books

2016

Neuroendoscopic Surgery

The development and refinement of neuroendoscopy has been driven by the persistent desire of neurosurgeons to advance the field and offer less invasive, more efficacious options to patients. This remarkable multimedia book reflects the technological advances achieved in the last two decades in optical fibers, cold light, cameras, and endoscopic instrumentation. Written by an impressive Who's Who of international neurosurgeons, the outstanding text and videos reflect global contributions to neuroendoscopy.

Current indications for intracranial and intraventricular endoscopy are described in depth, through detailed chapters, stellar videos, professional animations, and exquisite illustrations. The authors share their clinical expertise on procedures ranging from endoscopic third ventriculostomy to transventricular approach of the fourth ventricle. Cover to cover, this book details the differences, alternatives, advantages, and limitations of the flexible neuroendoscope.

This hands-on learning tool will enable neurosurgeons to perform endoscopy of the ventricles and basal cisterns for exploratory purposes and conditions such as hydrocephalus, congenital aqueductal stenosis, tumors, hypothalamic hamartoma, arachnoid cysts, and neurocysticercosis. Additional topics include endoscopic-assisted microvascular decompression and aneurysm surgery, fluorescence, complications, anesthesia, utilization in developing countries, and future trends.

Key Features:

Comprehensive multimedia reference with online access to 50 videos More than 300 meticulously drawn illustrations Beautifully illustrated anatomical chapters that facilitate in-depth understanding of endoscopic anatomy An entire chapter devoted to flexible neuroendoscopy Indications, preoperative preparation, procedure description, intraoperative complications and their management (""risk and rescue"" techniques), expert pearls, postoperative management, and outcomes This volume is a must-have resource for neurosurgery and neurology residents, neurosurgeons, pediatric neurosurgeons, and all physicians involved in the care of patients with intracranial and intraventricular disease.

Areas

Cerebrospinal fluid shunt

Tumor biopsy

Craniosynostosis

Endonasal surgery

Ventriculo-cisternal approaches

Brain parenchymal surgery

Skull base surgery.

Approaches

Neuroendoscopic approaches

Pure neuroendoscopic approaches are predominantly used in the treatment of intraventricular and intracystal pathologies, as well as in transnasal approaches to the cranial base.

The majority of endoscopic intraventricular surgery is performed for cerebrospinal fluid (CSF) diversion, but is also frequently used for colloid cyst resection, tumor biopsy, and arachnoid cyst treatment. Improved technology has given the neuroendoscopist an additional margin of confidence by means of improved visualization: preoperative 1.5-T and 3-T magnetic resonance imaging with constructive interference in steady state/fast imaging using steady-state acquisition sequences, high-definition cameras (2 million pixels), and coupling of navigation to the endoscope system.

During the development of these technologies over the past 20 years, multiple large series have reported on complications associated with endoscopic neurosurgery.

see Extended endoscopic endonasal approach

see Endoscopic endonasal approach

Instruments

Lotta

Complications

Neuroendoscopy complications.

1)

Yadav YR, Lucano A, Ratre S, Parihar VS. Practical Aspects and Avoidance of Complications in Microendoscopic Spine Surgeries: A Review. J Neurol Surg A Cent Eur Neurosurg. 2019 Apr 9. doi: 10.1055/s-0039-1677825. [Epub ahead of print] PubMed PMID: 30965374.