



## Endoscopic Neurosurgery

Jens Peter Witt\*

This paper describes an ultrasound-guided, laser-assisted, and TV-controlled endoscopic technique which has been used so far in 133 patients for a variety of intracranial lesions..

Following CT or MRI image reconstruction, and a decision on the placement of a 1 cm or a 2 cm burr-hole, a 1 cm 5.0 mHz or 7.5 mHz intra-operative ultrasound probe is used to direct the endoscope from the burr-hole to the target area. A 22.5 cm long rigid endoscope tube with an outer diameter of 6 mm with an inbuilt suction irrigation system, Neodymium Yag laser with 600 Mm Quartz glass-fibre and an inlet for various micro-instruments is then introduced. The attachment of a TV camera to the ocular lens allows the operator to control further surgical steps in the target area via the TV screen and thus warrants sterility in the operating field.

The technique has been used for evacuation of 77 spontaneous intracerebral haematomas (lobar, putaminal, thalamic), 8 traumatic intracerebral haematomas, 13 ventricular haematomas, 8 cerebellar haematomas and 1 brainstem haematoma. Total or subtotal evacuation was achieved in 33% of intracerebral haematomas, removal of more than 50% of the clot in 55%.

Twenty-four brain tumours (12 ventricular, 12 cystic cerebral or cerebellar tumours) were operated on for biopsy, evacuation of cyst, resection or removal of the cyst wall and/or laser irradiation of solid tumour or the inner cyst wall of cystic tumours.

The complication rate probably related to surgery was 1.6%, morbidity 1.6%, mortality 0%.

At Rebound, our multidisciplinary neurosurgery team is equipped with the latest technologies available to treat a variety of conditions that affect the brain, including tumors and lesions.

Endoscopic brain surgery is a procedure used primarily to treat brain tumors. It is considered a minimally invasive brain surgery that allows neurosurgeons to identify and treat conditions that are deep within the brain. This type of surgery allows us to treat brain tumors less invasively than traditional open brain surgery, while still affording us the ability to get an in-depth view of the brain.

\*Corresponding author: Dr. Jens Peter Witt, MD, Department of Neurosurgery, University of Colorado, USA, Tel: +1 658 2546198; Fax: +1 249 2546198; E-mail: wittjean.p@gmail.com

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During this procedure, thin tubing that transmits video images of the brain is inserted through one or two small incisions in the skull or through an opening in the body. This tube-like instrument, called an endoscope, contains a small camera that allows the neurosurgeon to see detailed images of the problem area in the brain.

Endoscopic approaches have truly transformed how we treat tumors, particularly because endoscopic techniques give us such a clear visualization of the tumor. This approach also does not always require us to access the brain through the skull. We're able to access the brain through pathways like the nose and sinuses as well.

The neurosurgeon will use the images transmitted by the endoscope as a guide for removing the tumor or repair the affected area of the patient's brain. The removal of the tumor or damaged area is performed with specialized surgical instruments.

With any surgery, there are risks involved. Rebound surgeons educate their patients on the best treatment options for their particular condition and communicate the potential risks. While the likelihood of a patient experiencing these complications is rare, we believe in strong patient-doctor communication, so each patient understands their procedure and the risks associated.

Endoscopic brain surgery offers many benefits to patients. This type of surgery is less invasive than other open surgery procedures, offering a faster recovery period and less pain for the patient. While each patient's medical history, age, condition and other factors play a role in the outcome of endoscopic brain surgery, here are some of common benefits associated with the procedure: Minimally invasive (results in less pain for the patient), Faster recovery time than open brain surgery, Reduced risk of brain trauma, Reduced risk of side effects, Reduced hospital stay.

### Author Affiliation

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Division of Neurosurgery A, Department of neurology and Psychiatry, Sapienza University of Rome, Italy

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