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Postoperative Pain and Methods of Neurosurgery

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Perspective

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DESCRIPTION

The medical speciality of neurosurgery, sometimes known as neurological surgery or brain surgery, focuses on the surgical management of illnesses affecting any part of the nervous system, including the brain, spinal cord, and peripheral nervous system. In the diagnosis and treatment of modern Neurosurgery, Neuroradiology techniques are used. They consist of Magnetoencephalography (MEG), Stereotactic Radiosurgery (ST), Computed Tomography (CT), Magnetic Resonance Imaging (MRI), PET, and Positron Emission Tomography (PET). In some neurosurgical procedures, functional and intra-operative MRI is used. In traditional open surgery, the neurosurgeon cuts a wide hole in the skull to gain access to the brain. Now, methods utilising endoscopes and tiny openings with the aid of microscopes are also in use. However, in trauma or emergency settings, the open techniques are still commonly used.

However, numerous elements of neurological surgery make use of microsurgery. Both EC-IC bypass surgery and restorative carotid endarterectomy employ microvascular methods. Using endoscopes or microscopes, minimally invasive spine surgery is performed. Neurosurgeons can access a tiny target in the brain using stereotaxy through a tiny incision. Surgical navigation, computer-assisted surgery, navigated surgery, and stereotactic navigation are all terms for conventional surgery that uses image guidance technologies. Image-guided surgery systems, such as Curve Image Guided Surgery and Stealth Station, use cameras or electromagnetic fields to capture and relay the patient's anatomy and the surgeon's precise movements in relation to the patient to computer monitors in the operating room, much like a car or mobile Global Positioning System (GPS). The use of these sophisticated electronic systems helps the surgeon get oriented with three-dimensional views of the patient's anatomy, including the tumour, both before and during operation. Electrocorticography has been used in real-time functional brain mapping to pinpoint specific functional areas.

Neurosurgeons, who occasionally collaborate with maxillofacial and plastic surgeons, treat craniofacial diseases and disturbances of cerebrospinal fluid circulation. Pediatric neurosurgeons can perform cranialplasties on patients with

craniosynostosis alone or in conjunction with plastic surgeons. Stereotactic radiosurgery is used by radiation oncologists and neurosurgeons to treat tumours and AVMs. Techniques for radiosurgery include Gamma knife, Cyberknife, and Novalis Radiosurgery. Endovascular surgical neuroradiology treats aneurysms, AVMs, carotid stenosis, strokes, spinal abnormalities, and vasospasms using endovascular image-guided procedures. Endovascular procedures include angioplasty, stenting, clot retrieval, embolization, and diagnostic angiography.

The insertion of a ventriculo-peritoneal shunt is a routine procedure in neurosurgery (VP shunt).This is frequently used in paediatric medicine for congenital hydrocephalus situations. Adults with normal pressure hydrocephalus are the target population for this operation the most frequently (NPH).Cervical, thoracic, and lumbar spine procedures are all included in spine neurosurgery. Spinal cord compression brought on by trauma, spinal disc arthritis, or spondylosis are a few causes for spine surgery. Patients with cervical cord compression may experience gait problems, balance problems, and/or tingling and numbness in their hands and feet. Spondylosis is a degenerative arthritis and spinal disc disorder that can compress the spinal canal. To address any spinal canal compression issues, power drills and specialised tools are frequently used. Cervical, thoracic, and lumbar spine procedures are all included in spine neurosurgery. Spinal cord compression brought on by trauma, spinal disc arthritis, or spondylosis are a few causes for spine surgery. Patients with cervical cord compression may experience gait problems, balance problems, and/or tingling and numbness in their hands and feet. Spondylosis is a degenerative arthritis and spinal disc disorder that can compress the spinal canal. Bone spurring and disc herniation are frequent side effects of this illness. To address any spinal canal compression issues, power drills and specialised tools are frequently used. Functional neurosurgery has a subspecialty called chronic pain surgery. Deep brain stimulators, spinal cord stimulators, peripheral stimulators, and pain pumps are some of the treatments.

A person may experience substantial pain after brain surgery, which could prolong recovery, lengthen their stay in the hospital after surgery, and raise their risk of complications. A person's likelihood of acquiring a persistent post-craniotomy headache may also rise if they have severe acute pain after brain surgery. Nonsteroidal Anti-Inflammatory Medicines (NSAIDs), which have been demonstrated to lessen pain for up to 24 hours after surgery, are one method for addressing pain in adults. Based on very flimsy medical data, gabapentin or pregabalin may help lessen postoperative nausea and vomiting.