Minimally invasive neurosurgery

see also Minimally invasive spine surgery.

see also Minimally invasive image guided therapy.

see Laser interstitial thermotherapy

Is any neurosurgical procedure (surgical or otherwise) that is less invasive than open neurosurgery used for the same purpose. A minimally invasive procedure typically involves use of devices and remote-control manipulation of instruments with indirect observation of the surgical field through an endoscope or large scale display panel, and is carried out through the skin or through a body cavity or anatomical opening. Interventional radiology may offer techniques that avoid the need for surgery.

A patient may require only a band-aid on the incision, rather than multiple stitches or staples to close a large incision. This usually results in less infection, a quicker recovery time and shorter hospital stays, or allow outpatient treatment.

However, the safety and effectiveness of each procedure must be demonstrated with randomized controlled trials. The term was coined by John EA Wickham in 1984, who wrote of it in British Medical Journal in 1987.

A minimally invasive procedure is distinct from a non-invasive procedure, such as external imaging instead of exploratory surgery. When there is minimal damage of biological tissues at the point of entrance of instrument(s), the procedure is called minimally invasive.

Laser interstitial thermotherapy (LITT), sometimes referred to as stereotactic laser ablation or SLA, is a minimally invasive surgery approach that uses thermal energy delivered by a laser to ablate tissue.

Examples

MIS transforaminal lumbar interbody fusion (MIS TLIF) procedure.

Magnetic resonance guided laser induced thermal therapy for epilepsy.

Laparoscopic implantation of a distal peritoneal catheter is a simple, minimally invasive, and easy procedure to perform and allows exact localization of the peritoneal catheter and confirmation of its patency.

Minimally invasive surgery (MIS) techniques are increasingly used to treat adult spinal deformity.

Journals


International journal Minimally Invasive Neurosurgery is now part of the Journal of Neurological
Surgery
