Optic nerve decompression

Optic canal decompression.

Indications

Indirect optic nerve injury.

The supraorbital approach is a minimally invasive technique and cosmetically favorable alternative to more extended approaches with longer operative times used for the management of optic nerve decompression in posttraumatic or compressive optic neuropathy from skull base pathologies extending into the OC. The relative ease of this approach provides a relatively short learning curve for developing neurosurgeons ¹⁾.

see Optic pathway glioma

Meningioma

see optic canal meningioma

Idiopathic intracranial hypertension

Several surgical treatment modalities, including lumboperitoneal or ventriculoperitoneal shunt surgery, subtemporal decompression, endovascular venous sinus stenting, optic nerve decompression (OND), were used in the management of idiopathic intracranial hypertension (IIH). Each surgical technique has different advantages and disadvantages.

Technique

Rigante et al. propose a stepwise decompression of the optic nerve (ON) through a supraorbital minicraniotomy and describe the surgical anatomy of the ON as seen through this approach.

They also discuss the clinical applications of this approach.

Supraorbital approaches were performed on 10 preserved cadaveric heads (20 sides). First, 3.5-cm skin incisions were made along the supraciliary arch from the medial third of the orbit and extended laterally. A 2 \times 3-cm bone flap was fashioned and extradural dissections were completed. A 180-degree unroofing of the ON was achieved, and the length and width of the proximal and distal portions of the optic canal (OC) were measured. Results The supraorbital minicraniotomy allowed for identification of the anterior clinoid process and other surgical landmarks and adequate drilling of the roof of the OC with a comfortable working angle. A 25-degree contralateral head rotation facilitated visualization of the ON.²⁾.

Endoscopic

Endoscopic optic nerve decompression.

Outcome

Ophthalmologic factors and factors directly related to the lesion are most important in determining vision outcome. The decision to perform optic nerve decompression for vision loss should be made based on careful examination of the patient and realistic discussion regarding the probability of improvement ³⁾.

underwent Navigation guided optic canal decompression via external transcaruncular approach, following which both cases showed visual improvement. Postoperative Visual Evoked Potential and optical coherence technology of Retinal nerve fibre layer showed improvement. These case reports emphasize on the role of stereotactic navigation technology for optic canal decompression in cases of traumatic optic neuropathy ⁴⁾.

1) 2)

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