Temporal horn entrapment

Entrapment of the temporal horn, known as isolated lateral ventricle (ILV).

Temporal horn entrapment is a very rare kind of isolated focal non communicating hydrocephalus caused by obstruction at the trigone of the lateral ventricle, which seals off the temporal horn from the rest of the ventricular system 1(2)(3).

A very thoughtful review of the literature in 2013 reported only 24 cases 4)

In 2017 Guive Sharifi et al published a Review of Literature http://www.jneuro.com/neurology-neuroscience/an-idiopathic-huge-trapped-temporal-horn-surgical-str ategy-and-review-of-literature.pdf

Etiology

Obstruction around the trigone of the lateral ventricle caused by inflammations, tumors, infections, or after surgical processes. Most reports are unilateral and acquired.

Treatment

Standard treatment has not yet been established for this condition, and only a few cases have been reported in the literature.

Entrapped temporal horn syndrome secondary to obstructive neoplastic lesions is most frequently treated by surgical excision of the offending lesion.

Golpayegani et al., from the Department of Neurosurgery, Loghman Hakim Hospital, Shahid Beheshti University of Medical Sciences, Department of Neurosurgery, Children's Hospital Medical Center, Tehran University of Medical Sciences, Tehran, Iran, reported in 2018 the first congenital case of huge bilateral temporal horn entrapment. A six-month-old boy was admitted with progressive intracranial hypertension who was managed with bilateral ventricular catheters and Y tube connected to one peritoneal catheter⁵⁾.

Zhang et al., reviewed their database to report their experience with endoscopic fenestration for treating entrapped temporal horn caused by atrial adhesions. All endoscopic operations performed from February 2015 to December 2016 were reviewed.

Three patients developed temporal horn entrapment after tumor resection. Fenestration was successful in all patients, with a subsequent stomy of the septum pellucidum. Follow-up magnetic resonance imaging 1 year later showed a patent reduction of the entrapped horn.

Endoscopic fenestration is an option in the treatment of entrapped temporal horns. However, more experience is required to recommend it as the treatment of choice ⁶⁾.

Entrapment of the temporal horn, known as isolated lateral ventricle (ILV), is a rare type of noncommunicating focal hydrocephalus, and its standard treatment has not been established.

Hasegawa et al. report two cases of endoscopic surgery for ILV, and highlight the anatomical surgical nuances to avoid associated surgical risks.

The authors present two surgical cases with ILV treated by endoscopic surgery. The first patient with recurrent ILV, due to shunt malfunction, following the initial shunt placement for ILV. In the second patient, the ILV recurred due to choroid plexus inflammation caused by cryptococcal infection. Endoscopic temporal ventriculocisternostomy was effective in both cases. However, in the second case, the choroidal fissure was fenestrated, which led to cerebral infarction in the territory of the choroidal artery zone, attributed to damaging the branches of the choroidal segment of the anterior choroidal artery.

Endoscopic temporal ventriculocisternostomy is considered as a safe and less invasive procedure for treatment of symptomatic ILV. However, the technique is still associated with risks. To avoid complications, it is necessary to be familiar with the anatomy of the choroidal arteries and the pertinent endoscopic intraventricular orientation. Additionally, sufficient experience is required before it can be recommended as the treatment of choice ⁷⁾.

A 76-year-old male presented with altered mental status and left-sided weakness. Noncontrast computed tomography of the head showed a right ganglionic intraparenchymal hemorrhage with resultant entrapment of the temporal horn. Using Robotic Stereotactic Assistance (ROSA), intrahematomal and intraventricular catheters were placed. The temporal horn was immediately decompressed, and the hematoma almost completely resolved with scheduled administration of intrathecal alteplase in the ensuing 48 hours postoperatively.

Frameless image-guided placement of intraparenchymal hematoma catheter using Robotic Stereotactic Assistance is safe and efficient⁸⁾

Paredes et al., reviewed their cases of temporal horn entrapment treated between May 2013 and December 2014 and report their experience with endoscopic temporal ventriculocisternostomy. Four patients were identified (3 adults and 1 child) who underwent this treatment. In 3 patients, the condition developed after tumor resection, and in 1 patient it developed after resection of an arteriovenous malformation. In 1 patient, a recurrent trapped temporal horn developed and a refenestration was successfully performed. No procedure-related complications were observed, and all of the patients remained shunt-free at last follow-up (range 4-24 months). Endoscopic temporal horn ventriculocisternostomy is a safe and effective procedure for the treatment of symptomatic temporal horn entrapment in selected cases. However, there is little experience with the procedure to recommend it as the treatment of choice ⁹.

In 2015 Spallone et al., reported a case of a 58-year-old man who presented with pure Wernicke aphasia (never described before in the albeit rare cases of isolated temporal horn dilatation) that

regressed completely following successful ventriculoperitoneal shunting ¹⁰.

Chen et al described in 2013 an alternate approach involving temporal horn to prepontine cistern shunting followed by radiosurgery of the offending lesion. This 41-year-old woman with a history of meningiomatosis presented with progressive, incapacitating headache. Magnetic resonance imaging (MRI) showed growth of a right trigone meningioma, causing entrapment of the right temporal horn. A ventricular catheter was placed using frame-based stereotaxy and image fusion computed tomography/MRI to connect the entrapped lateral ventricle to the prepontine cistern. The patient reported complete resolution of her symptoms after the procedure.

Postoperative MRI revealed decompression of the temporal horn. The trigonal meningioma was treated with stereotactic radiosurgery. The patient remained asymptomatic at the 2-year follow-up ¹¹).

In 1992 two cases of entrapment of the temporal horn, computed tomography demonstrated the typical appearance of a comma-shaped homogeneous area isodense with water surrounded by a periventricular low-density area. The cause was probably choroid plexitis resulting in obstruction of the cerebrospinal fluid pathway at the atrium. External drainage followed by shunt emplacement was indicated ¹².

Maurice-Williams and Choksey reported in 1986 three cases of temporal horn entrapment: A recurrent glioma, a previous tuberculous meningitis and surgical excision of an intracranial arteriovenous malformation which extended into the trigone. Shunting of the trapped temporal horn provided satisfactory treatment ¹³.

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