

**4TH VENTRICULAR SHUNT CATHETER CAUSING BILATERAL 7TH NERVE PALSY:
A CASE REPORT**

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ABSTRACT

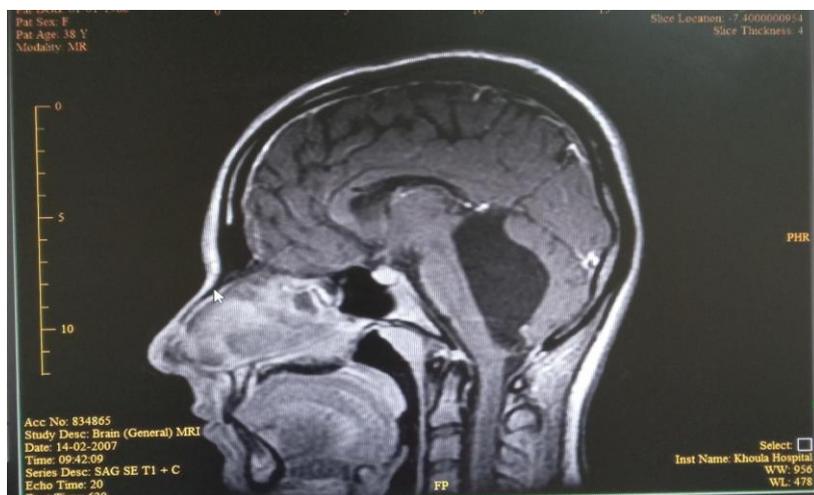
An isolated fourth ventricle is characterised by cerebrospinal fluid (CSF) trapping in the fourth ventricle. Although there is no consensus regarding treatment, ventriculoperitoneal (VP) shunting of the fourth ventricle is an option. Complications include infection, mechanical irritation of the brainstem, malfunction and overdrainage. Cranial nerve palsy is a rare complication and has been mostly described in children. We present one case of facial nerve palsy occurring secondary to this procedure.

INTRODUCTION

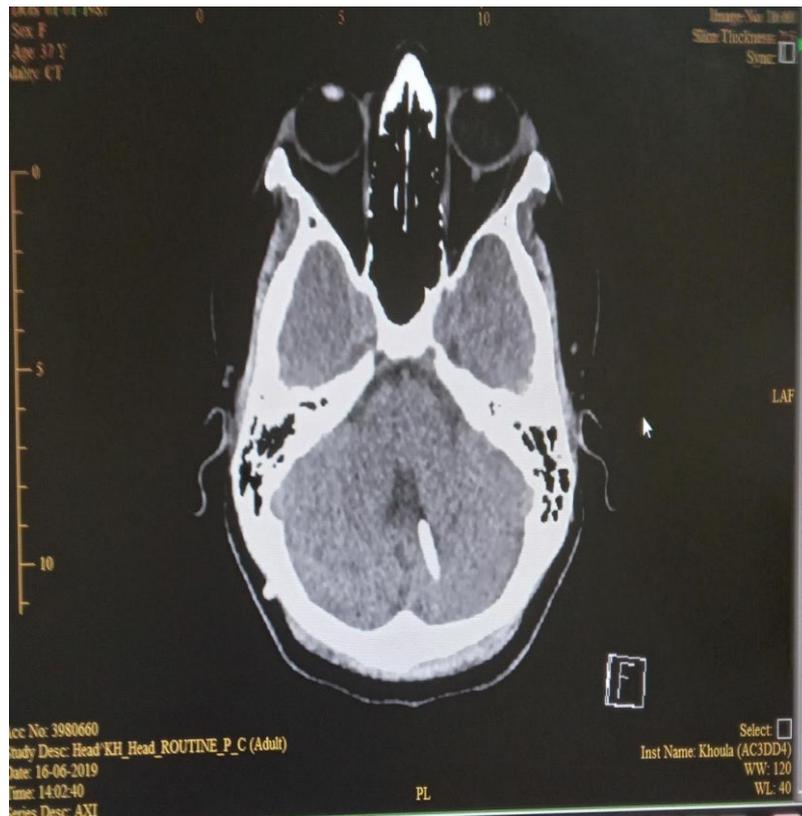
Cranial nerve palsy is rarely seen after shunt placement in an isolated fourth ventricle. In the few reports of this complication, neuropathies are thought to be caused by catheter injury to the brainstem nuclei either during the initial cannulations or after shrinkage of the fourth ventricle.

CASE REPORT: This patient now 36 Yr old had hydrocephalus and required VP shunt at age of 2 months. At age of 8 yrs required revision. Patient was followed up in out patient department and at age of 21 years she started complaining of headache and imaging revealed trapped 4th ventricle. After explaining all possible risks and benefits patient underwent posterior fossa craniectomy adhesionolysis and 4th ventricular endoscopic aqueductoplasty. Postoperative patient developed bilateral ptosis which improved gradually. In

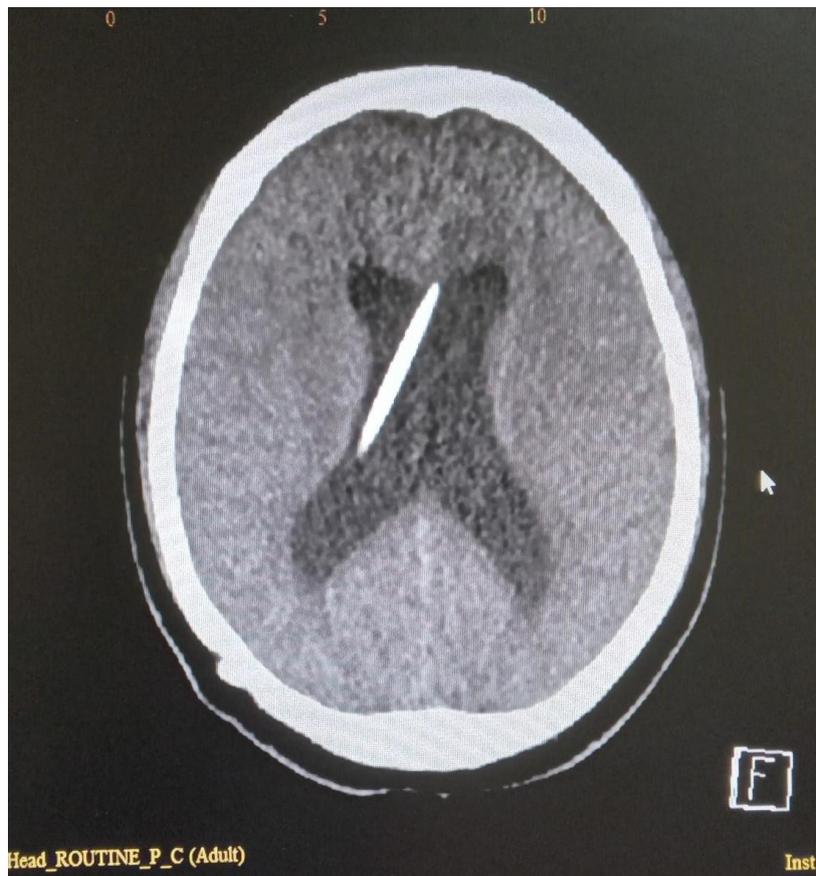
follow up however she developed persistent 4th ventricular dilatation hence 4th ventriculoperitoneal shunt was placed. Patient on follow up gradually developed 6th and bilateral 7th the nerve palsy. Patient developed shunt malfunction hence required multiple revisions. Patient later developed abdominal adhesions hence laparoscopic placement of shunt was done. Patient developed csf infection and required exteriorisation of lateral ventricular and 4th ventricular catheters. Once csf infection was controlled underwent ventriculoperitoneal shunt and 4th ventricular catheter connected via Y connector to main shunt. Post op CT however required adjustment of 4th ventricular catheter. Cranial nerve palsy is improving. Cranial nerve palsies post 4th ventricular manipulations were unexplained hence required literature review and was found to be occasionally encountered in view of csf dynamics alteration in posterior fossa.



1 MRI showing trapped 4th ventricle



2 CT brain showing 4th ventricular catheter in place with decompressed ventricle but with cranial nerve paresis.



3 CT brain showing lateral ventricular catheter in place with cranial nerve paresis.



4 New 4th ventricular catheter after settling of csf infection with improvement in nerve paresis.



5 New lateral ventricular catheter after settling of csf infection with improvement in nerve paresis.

DISCUSSION

Alexandrae Simonine in 2015 described cranial nerve palsies after shunting of isolated 4th ventricular dilatation.^[1] Fritsch M J in in 2004 described his experience of endoscopic aqueductoplasty of isolated 4 th ventricular dilatation.^[2] Eder H G in 1997 described complications after shunting of 4 th ventricular dilatation.^[3] HarterDJ in 2004 described management strategies in 4 th ventricular dilatation.^[4] Dimitrios in

2021 described in detail the entity of trapped 4th ventricular pathophysiology and treatment.^[5]

CONCLUSION

Trapped fourth ventricle is entity which gives great challenges to the neurosurgeons. Endoscopic aqueductoplasty to 4th ventricular shunting all give a diverse range of complications. Cranial nerve palsy accounts to majority of it. Our patient is one of such patient.

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