

## CASE REPORT

## An acute headache and hydrocephalus caused by the dermoid cyst

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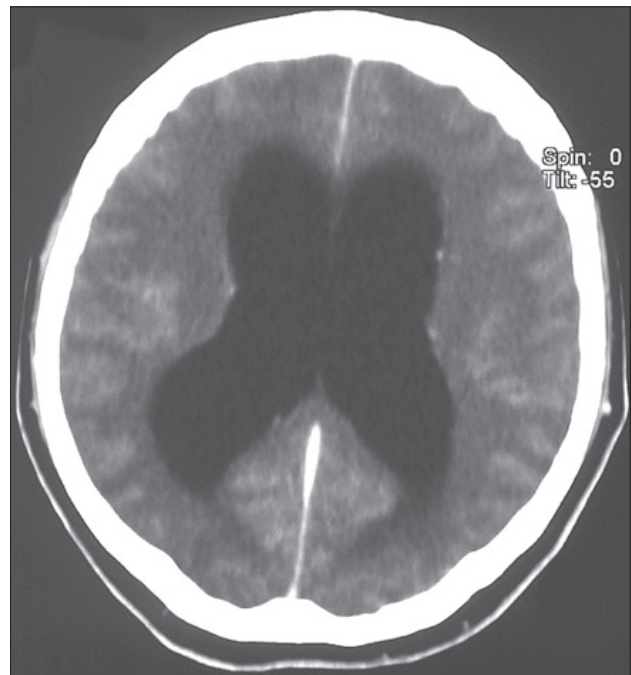
**Abstract:** We present a case report of a 41-year-old man with an acute headache and hydrocephalus caused by the dermoid cyst. The dermoid cyst of the third brain ventricle caused an acute hydrocephalus and an increased intracranial pressure (with neurological signs such as nausea, vomiting, oedema papillae n. optici) and, consequently, an acute intensive headache. Computed tomography scans demonstrated a mass in the third ventricle extending into the prepontine cistern, whereas any initially established cerebrospinal fluid ventriculo-peritoneal shunt required further revision (Fig. 2, Ref. 12). Full Text (Free, PDF) [www.bmj.sk](http://www.bmj.sk).

**Key words:** headache, hydrocephalus, intracranial pressure, dermoid cyst, CT, acute headache.

Hydrocephalus (HCP) is characterized by an increased volume of the cerebrospinal fluid (CSF) associated with a dilatation of the ventricles. Three mechanisms can cause HCP: the obstruction of the CSF pathways, a defective absorption of CSF and the oversecretion of CFS. The non-communicating hydrocephalus (the obstruction of CFS pathways) is due to the intraventricular obstruction of the foramen Monro, the third ventricle, the aqueduct, or the foramina of Luschka or Magendie. The aqueductal stenosis, cysts, intra- and extraventricular tumours, inflammation, and congenital malformations are some of the causes (1, 2). Dermoid cysts are rare, space-occupying lesions of the central nervous system. Intracranial dermoid cysts are usually reported to be associated with long lasting or waxing-waning symptoms (3). In this study, we present a case report of an acute headache caused by the increased intracranial pressure (ICP) hydrocephalus due to the CSF flow obstruction, which resulted from the dermoid cyst of the third brain ventricle.

## Case report

A 41-year old man reported a sudden intensive acute headache. He had no severe disease and no headache history. The body temperature was normal. The overall neurological status was normal, with a stiffed neck. He reported nausea and vomiting sensation. The headache intensified with a sudden vomiting. The fundoscopy reveals a pale papilla n. optici, bilaterally and temporally. The computed tomography (CT) was performed immediately. The CT of the brain was performed using the 7 MSCT Somatom Sensation 16 – Simens 2005. The ventricular system



**Fig. 1.** CT of the brain – coronary slice – dilated lateral ventricles – hydrocephalus, flattened sulci, brain tissue oedema.

was markedly dilated, with atrophic changes of the brain, forming hydrocephalus with the sulci filled up and the brain tissue oedema, with no signs of atrophic changes (Fig. 1).

At the level of the frontal part of the third brain ventricle there is an evident hyperdense tumorous formation 10 mm in diameter, indicating a dermoid cyst (Fig. 2).

The MSCT angiography of the brain excluded blood-vessel malformations. Management of the obstructive hydrocephalus that accompanies tumours located in the third ventricle has traditionally involved either urgent tumour resection, with resulting ventricular decompression, or cerebrospinal fluid diversion

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**Fig. 2.** CT of the brain – coronary slice – hyperdense tumour formation 10 mm in diameter.

that requires either ventriculostomy or a shunt placement prior to the tumour removal (4). Therefore, an urgent decompression was performed and subsequently the tumour surgery. Patho-histological tests confirmed the dermoid cyst.

### Comments

A slow growing dermoid cyst obstructed the CSF drainage and caused the hydrocephalus. The signs of an increased ICP included headache, diplopia, nausea and vomiting, papilledema, seizure, Parinaud syndrome, ataxia, hemiparesis (5, 6). The reviewed patient's symptoms were intensive, an acute headache with changes in the papillae n. optici, followed by vomiting. The neurological diagnostic method of choice in patients with an acute headache is the CT of the brain (7–9). As manifested by CT of the brain, which showed no signs of brain atrophy but markedly dilated lateral brain ventricles and brain tissue oedema with flattened sulci, we concluded the case as an acute obstruction of liquor drainage. The CT scans demonstrated a large, low density mass in the entire third ventricle extending into the prepontine cistern.

This was confirmed also by an intensive headache. The sudden headache with the signs of an intracranial pressure, vomiting and changes of the papilla n. optici, was suspicions from the CSF drainage obstruction caused by a tumour process, even the dermoid cyst of the third brain ventricle. Clinical and imaging features were discussed. An increase of the ICP and the obstructed CSF drainage may have caused herniated mass, which required an urgent neurosurgical treatment. The cerebrospinal fluid ventriculo-peritoneal shunt was initially established, which required further revision, as recommended by other authors, too

(10, 11). Cysts of the third ventricle due to acute hydrocephalus were described (12). The ventriculo-peritoneal shunt decreased ICP and the intensity of the headache. In a subsequent surgery, the dermoid cyst was removed, and proven also patho-histologically. Thus, the dermoid cyst of the third ventricle caused the acute hydrocephalus and acute headache.

### Conclusion

Dermoid cysts are rare, space-occupying lesions of the central nervous system. A rare case of dermoid cyst of the third ventricle was observed. The intracranial dermoid cyst obstructed the cerebrospinal fluid (CSF) flow and caused the hydrocephalus. An acute onset of an intensive headache resulting from an increased intracranial pressure is very rarely caused by the hydrocephalus due to the intraventricular space tumour and the consequential CSF drainage disturbances. A dermoid cyst is an exceptionally rare basic cause of the hydrocephalus and acute headache.

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