TWO UNCOMMON CASES OF COLLOID CYST OF THE THIRD VENTRICLE

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ABSTRACT

Colloid cysts of the third ventricle of brain comprise 1-2% of all intracranial tumours [1]. They are increasingly being discovered incidentally, often in patients complaining of headache [2]. We came across two such cases in a large tertiary care service hospital in the past 20 years. Second case also had associated visual disturbances and seizures. Both met with fatal outcome. Autopsy revealed presence of colloid cyst in the third ventricle in both cases. It is proposed that to avoid fatal outcome in a patient reporting with frequent attacks of headache, the presence of colloid cyst in the third ventricle should be considered in differential diagnosis. In such cases, CT scan or MRI study of brain becomes an essential diagnostic tool.

MJAFI 2000; 56 : 338-340

KEY WORDS: Colloid cyst; Cyst in the third ventricle.

Introduction

The colloid cyst, a benign tumour, usually arises in the roof of the third ventricle. Its incidence reported in literature is 1-2% of intracranial space occupying lesions (ICSOL) [1]. Episodes of headache are the most common presentations. Occasionally, the onset is sudden and lethal [1].

In a span of 20 years (1980-1999), we encountered two such cases in a large service hospital providing tertiary medical care. The diagnosis could be made only on autopsy examination. This article aims to draw the attention of clinicians to keep this entity in differential diagnosis while evaluating patients reporting with frequent attacks of headache and the cause remains unexplained.

Case Report-1

A 19-year old male recruit was admitted in February 1980 with complaints of headache and low grade fever. History of associated vomiting and visual disturbances was not present. He was apparently in a good state of health prior to the onset of present sickness. Examination failed to reveal any focus of infection in the body. No visual field defect was observed. All investigations including haematological, biochemical parameters, and x-ray skull were normal. He recovered fully with bed rest, analgesics and antipyretics and was discharged within a week. Four days after, he was readmitted with throbbing headache located over both temporal regions. He did not give any history of nausea, vomiting, visual disturbances, behavioural disorders, episodic loss of consciousness and seizures. Examination revealed enlarged tonsils and adenoids. Central nervous system examination was non-contributory. He underwent adenotonsillectomy. Immediate postoperative period was uneventful. On second postoperative day, he had two bouts of vomiting associated with severe headache. His headache kept varying in intensity till the third postoperative day. In the same

afternoon, while presumably asleep, he was found dead.

Postmortem : revealed a mobile, light gray, homogeneously gelatinous material filled mass, 1.5 cms in diameter, located in anterior part of third ventricle (Fig-1). Choroid plexus on either side was found adherent, both lateral ventricles appeared dilated. Cerebellar tonsils were raw on surface. No areas of haemorrhage, scarring/infarct, granuloma and neoplasm were seen in brain parenchyma.

Histopathology : of the cystic mass in third ventricle of brain showed lining of ciliated columnar cells. The cyst comprised homogeneously staining periodic acid Schiff (PAS) positive substance and dispersed vacuolated cells. Rest of the organs did not reveal any abnormality. The diagnosis of colloid cyst of the third ventricle causing acute obstructive (non-communicating) hydrocephalus was made.

Case Report -2

A 30-year old male, driver by trade, was admitted on 09 Aug 99 with complaints of frequent attacks of giddiness and headache

Fig. 1 : Hemisection of brain sectioned through corpus callosum depicting colloid cyst in third ventricle (case 1).

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Fig. 2 : Coronal section of brain showing colloid cyst in the third ventricle and dilated lateral ventricles (case 2)

of 1 week duration. While eliciting the history, individual revealed that he used to have infrequent attacks (about once in two weeks) of short duration of headache during the past 4 months. These used to be relieved by lying down and without intake of analgesic. During the spells of headache, he had observed colour blindness. Also, he gave history of having had two spells of unconsciousness, possibly seizures, each lasting 3-5 minutes. These were not associated with vomiting, tongue bite, sphincter incontinence and automatism in pre and post-ictal periods. Clinical examination on admission revealed bilateral papilloedema. He was placed on antiepileptics and cerebral decongestion regimen. X-ray skull, haematological and biochemical profiles were normal. After two days, while awaiting for CT scan he threw a generalised seizure which lasted 6-8 minutes. 2 hours later it was followed by frequent attacks of seizures resulting later into his death.

Postmortem : revealed brain weighing 1375 gms. A 1.5 x 0.7 cms, cystic, light gray mass was seen occupying the third ventricle, blocking both foramina of Monro. On either side, choroid plexuses were found adherent. Both lateral ventricles were markedly dilated, a maximum cross-sectional diameter of 3.7 cms and contained clear CSF (Fig-2). Cerebellar tonsils appeared herniated. No haemorrhage, infarct or neoplasm was seen in brain substance.

Histopathology : of the cystic mass depicted features of colloid cyst as seen in case 1. The cyst wall was composed of a layer of cuboidal and columnar ciliated cells, gelatinous, PAS positive, homogeneous material, filled the mass. A few vacuolated cells were seen dispersed in the mass (Fig-3). Cause of death was opined as colloid cyst in the third ventricle causing acute hydrocephalus.

Discussion

The clinical importance of colloid cyst of the third ventricle is due to the risk of significant morbidity and mortality when it enlarges sufficiently to obstruct the foramen of Monro and causes the development of hydrocephalus. Nitta and Symon in a review of 36 cases described the following patterns of clinical presentations. Group 1 (47%) had headache, papilloedema but no neurological deficit. Group 2 (17%) had fluctuating or progressive dementia. Group 3 (33%) had

Fig. 3 : Photomicrograph depicting colloid cyst lined by cuboidal and columnar epithelium with adherent choroid plexus (case 2) (H&E x 100)

'classical' features of epilepsy, headache and drop attacks. Group 4 (3%) remained unclassified [3].

Headache was reported as the commonest manifestation (84%) in another study [2]. Intermittent attacks of headache are sometimes related to posture and are attributed to acute hydrocephalus produced by a shift of the colloid cyst blocking foramina of Monro. Sudden loss of consciousness and death may result in about 10% of all cases, and the cyst may be found only at autopsy [1,2,4].

In the present reports, cases had frequent attacks of headache. The second patient also had seizures and papilloedema. Relief of headache by change of posture in our cases appears related to the location of colloid cysts. No history of behavioral disorders was present in either case. There is no sex predilection. It occurs commonly in age group of third to fifth decades [5]. However, our first case was 19 years of age. The incidence of colloid cyst comprises 1-2% intracranial tumours [1]. We have encountered two cases in a span of 20 years. It is not possible to comment on the

incidence in the present study since our hospital has started definite surgical management of ICSOL recently.

Colloid cyst of the third ventricle can be diagnosed by CT or MRI. The tumour usually can be visualized as non-enhanced low density mass on non-contrast axial CT scan. It, however, needs to be differentiated from other tumours that invade the third ventricle such as gliomas, papillomas of the choroid plexus, craniopharyngiomas, pineal tumours and pituitary adenomas [6].

Ultrastructural features of colloid cyst of the third ventricle indicate that it originates from endoderm. The lining cells resemble epithelium of choroid plexus, ependyma and respiratory tract being ciliated columnar to cuboidal in morphology [7]. Immunocytochemically, it is positive for CK, CEA and EMA, and negative for GFAP and choroid plexus-associated transthyretin (pre-albumin) [8,9].

Stretotactic surgery, microsurgical resection (transcortical or transcallosal) and neuroendoscopy are some of the methods employed in the definitive surgical management of colloid cyst of the third ventricle. Each has its advantages and disadvantages [1].

To conclude, this report highlights the need to keep in mind the differential diagnosis of colloid cyst of third ventricle in adults who report with unexplained frequent attacks of headache. CT scan or MRI study should essentially be done in such cases to confirm or

exclude its existence.

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