COLLOID CYST OF THE THIRD VENTRICLE

(A Case Report)

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Introduction

Colloid cysts of the third ventricle are rare benign tumours comprising 2% of intracranial tumours. Their origin is still uncertain. They are postulated to arise either from the embryonic paraphysis at the anterior end of the third ventricle or the ependyma or from the chroid plexus. These are thin walled cysts containing homogenous gelatinous material which is PAS positive. The cysts are lined by columnar or cuboidal epithelium [1]. These occur during 10-60 years of age but most often in the first 3-4 decades of life [2].

Case Report

A 37-year-old male veterinary surgeon was admitted to the hospital with unconsciousness of 15 minutes duration. He had 3 to 4 episodes of drop attacks within past one month. He also had frequent bifrontal headaches, increasing in frequency, duration and intensity for last 4 days. These episodes of headache were associated with vomiting. Otherwise the patient was healthy and had been attending his regular work at office and home. He had had no seizures, fever or trauma to the head in the recent past. There was no history of tuberculosis, diabetes or hypertension.

On initial clinical assessment, he was suspected to have acute cerebral edema. On examination, there was bradycardia and hypotension. Pupils were dilated and non-reactive. There was no neck rigidity. Reflexes were brisk with bilateral extensor planters. The other systems were normal.

Investigations including haemogram, blood sugar, blood urea, urine and ECG were within normal limits. Fundoscopy showed clear fundi with no papilloedema, haemorrhage or exudates. A diagnosis of acute viral encephalitis was thought of and lumbar puncture was

done to establish the diagnosis. Careful and minimal CSF tap and examination did not reveal evidence of subarachnoid hemorrhage. CSF was clear with normal sugar, protein, globulin and chloride levels. Treatment was started with Inj. gentamicin, mannitol and dexamethasone. However, he expired 2 hours after admission.

Autopsy revealed congested lungs, liver and kidneys. The brain weighed 1450 gms and showed prominent and engorged blood vessels coursing over the cerebral hemispheres. Ventral surfaces of medial temporal lobes were grooved (pressure against the free edge of the tentorium cerebelli). Cut surface revealed dilated lateral ventricles containing substantial amounts of clear CSF. Both gray and white matter were dotted with congested blood vessels. In the dilated third ventricle a cystic lesion containing gelatinous material was present (Fig 1). Histopathological examination revealed dilated and congested blood vessels in leptomeninges and brain substance. Wide spread edema and diffuse microglial proliferation were present. Sections from the third ventricle showed a cyst with a fibrocollagenous wall. It was lined by columnar epithelium. At places, multilayering of the epithelium was evident. The lumen of the cyst was filled with homogeneous eosinophilic material which was PAS positive. The PAS positive material was also present within the epithelium (Fig 2 and 3). There was no evidence of pontine hemorrhage, AV malformations or aneurysm.

Discussion

Colloid cyst of the third ventricle is one of the differential diagnosis in cases of sudden death of central nervous system origin. This tumour has to be differentiated from papilloma and a number of tumours which extended into the third ventricle, like astrocytoma and pinealoma [3]. Colloid cysts may encroach into the foramen of Monro causing obstructive hydrocephalus, thus increasing

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Fig. 1 : Sagittal sections of brain shows dilated third ventricle, containing colloid cyst with gelatinous material (arrow).

the intracranial pressure [4]. They have a ball valve effect with shift of position and cause drop attacks and intermittent intense, preferentially bifrontal headaches [5]. Sudden death is frequent due to these tumours because of herniation of the medial temporal lobes through the tentorial opening [3], resulting from sustained unrelieved rise of intracranial pressure. In absence of CT scan and MRI studies, most of the colloid cysts are not diagnosed during life. These tumours produce headache, dizziness, weakness and numbness of lower extremities [2].

Colloid cysts occur most commonly in the anterior part of the third ventricle but they can develop in any part of the cerebral ventricular system [6]. The cyst lining is somewhat variable, consisting of either simple or

Fig. 2 : Whole section mount. Cerebral tissue 'C'; colloid cyst 'X'.

Fig. 3 : Colloid cyst with fibrous wall, lined by columnar epithelium and filled with proteinaceous material (HE x 100).

stratified epithelium with columnar cuboidal or squamous cells. These cells may be ciliated and contain blepharoplasts. Mucus secreting cells, goblet cells, granular cells, foamy cells and vacuolated cells have all been described [7].

Computerised tomography scan shows high density masses with defect in the third ventricle, which cannot be differentiated from other tumours unless the patient has characteristic signs and symptoms, related to colloid cyst [2]. Other investigations include ventriculography, angiography and air contrast studies which demonstrate lateral ventricular dilatation and outline the contour of the cyst [2,8]. Surgical removal is the treatment of choice if the colloid cyst is diagnosed

during life and this treatment has favourable prognosis [7]. Ventriculo-peritoneal shunts of the CSF, leaving the growth untouched, has yielded satisfactory results. Decompression the cyst by aspiration under stereotaxic control has also been effective in some cases [9].

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