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Endoscopic Retrieval of Septum Cavum Neuro Cysticercal Cyst with an Angiographic Catheter- Case Report

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Abstract

Cysts of the Cavum Septum Pellucidum (CSP) though uncommon, can be treacherous. We present the case of an adult male with a Neuro Cysticercal Cyst (NCC) within the CSP which was retrieved endoscopically with a novel technique using an angiographic catheter. This specific location for NCC has never been reported in the literature and together with its unique endoscopic management makes it worth reporting.

Keywords: Septum cavum; Neuro cysticercal cyst; Endoscopy; Angiographic catheter

Clinical Details

A 25 year old male presented with progressive diminution of vision in both eyes for 2 weeks, holocranial headache, nausea, projectile vomiting and gait ataxia. On examination his Mini Mental Status Examination (MMSE) score was 20/30 and Glasgow coma score was 15/15. On Snellen chart his visual acuity was 6/20 in both eyes. Fundoscopic examination revealed grade II papilledema bilaterally. On gait examination he could not walk for fear of falling and tandem gait was not possible.

His pre- operative contrast enhanced CT scan (Figure 1) revealed a midline Intraventricular cyst within the CSP and with a preoperative differential diagnosis of NCC vs. Ependymal cyst an endoscopic procedure was planned to retrieve the cyst.

At endoscopy, on entering the frontal horn of the lateral ventricle, it was found to be occupied by a ballooned septum. The septal wall was perforated with an angiographic catheter [1] and the bladder wall of the cyst was seen filling in between the two leaves of the septum. The open end of the catheter was brought in contact with the cyst and suction was applied with a 20cc syringe attached to the outside end of the catheter. This maneuver sucked the entire cyst into the syringe.

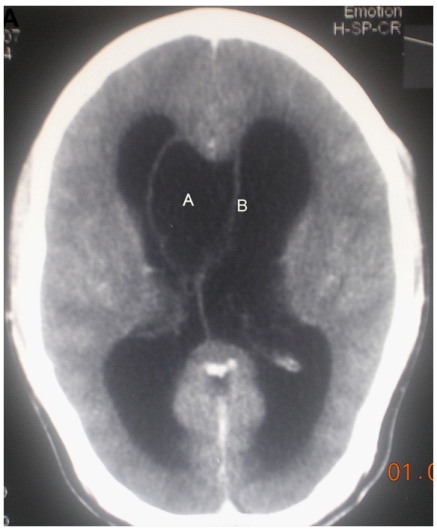

Figure 1: Pre- operative contrast enhanced CT scan revealed a midline Intraventricular cyst (A) and cyst wall enhancement (B).

Post operatively the patient was relieved of his symptoms of mass effect and achieved a MMSE score of 25/30 at one week after the surgery. His acuity on Snellen chart improved one grade from 6/20 to 6/15 bilaterally. Postoperative contrast enhanced CT (Figure 2) of the brain and contrast enhanced post-operative MRI (Figure 3) demonstrated complete absence of the cyst from the ventricular system. Histopathological examination of the cyst confirmed it to be a NCC (Figure 4).

Discussion

Cysts of the CSP enjoy some mention in the literature and are

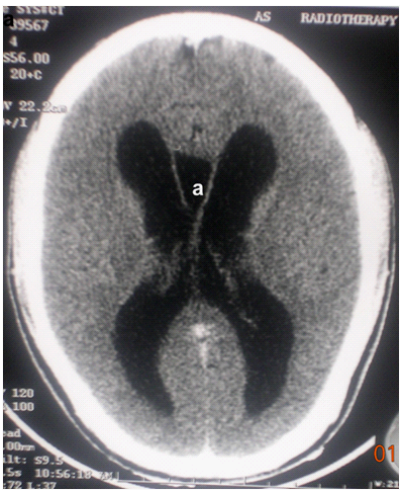

Figure 2: Postoperative contrast enhanced CT of the brain revealing complete excision with significant reduction in size (a) of septum cavum.

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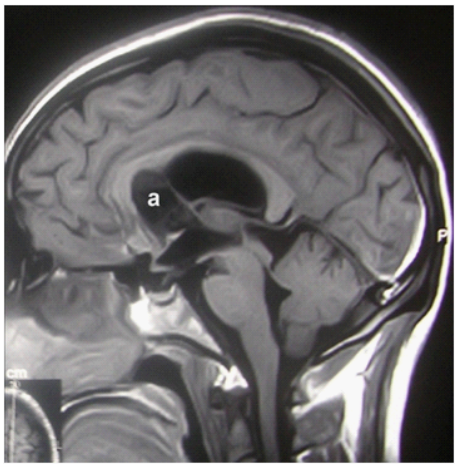

Figure 3: Contrast enhanced post-operative MRI demonstratiNg absence of cyst (a) from ventricular system.

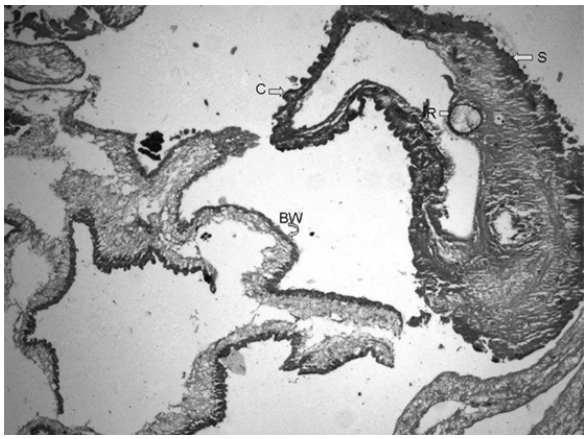

Figure 4: Microscopic view of Cysticercus bladder wall (BW) and scolex (S) with a degenerating rostellum (R). Wall and scolex are lined by lined by a wavy hyaline cuticle (C). HE x 50x digital magnification 254x190mm (96 x 96 DPI).

seldom the cause of any clinically recognized syndromes warranting treatment. In India, NCC is a common parasitic disease that manifests numerous clinical signs and symptoms. The most common presentation is seizure secondary to parenchymal cysts and hydrocephalus either caused by the sheer number of cysts occluding CSF flow or, more commonly, a chronic arachnoiditis associated with cyst degeneration. Intraventricular involvement is less common and is usually accompanied by parenchymal cysts. In our case the NCC traversed the septum cavum, lateral ventricle and the third ventricle roof. The management of Intraventricular disease varies depending on clinical experience and institutional bias, because literature provides only anecdotal reports. Overall, the morbidity rate associated with extraparenchymal cysticercosis is greater than that for parenchymal disease.

The septum is formed by two laminae that fuse during embryological development from caudal to cranial orientation and is separated from cavum vergae (CV) by the columns of the fornix. CSP and CV are formed when the two primordial leaflets of the septum fail to fuse. CSP has an estimated occurrence rate of 100% in prenatal children, 85 % in mature newborns and in adults it ranges from 4 to 74 % [2,3]. The only study on cysts of the CSP and CV is from the Weill medical College of Cornell University [3] which highlights the third ventricular endoscopic access route in patients with CSP and CV cysts. Our report is the first such report to document a NCC in CSP and its retrieval with a novel technique.

Though this cyst was not ruptured during its retrieval, we have not encountered signs of arachnoiditis in other patients where the cyst did rupture using the same angiographic catheter assisted technique for removal.

CSF concentrations of albendazole and praziquantel are lower than those in the parenchyma making medical management even more unlikely to treat Intraventricular NCC adequately. Several authors have reported the extirpation of these cysts by open craniotomy [4] or aspiration via CT-guided stereo tactic puncture [5]. This case report reinforces the extreme utility of minimally invasive neurosurgery to tackle cystic lesions in the depths of the complexities of the brain.

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