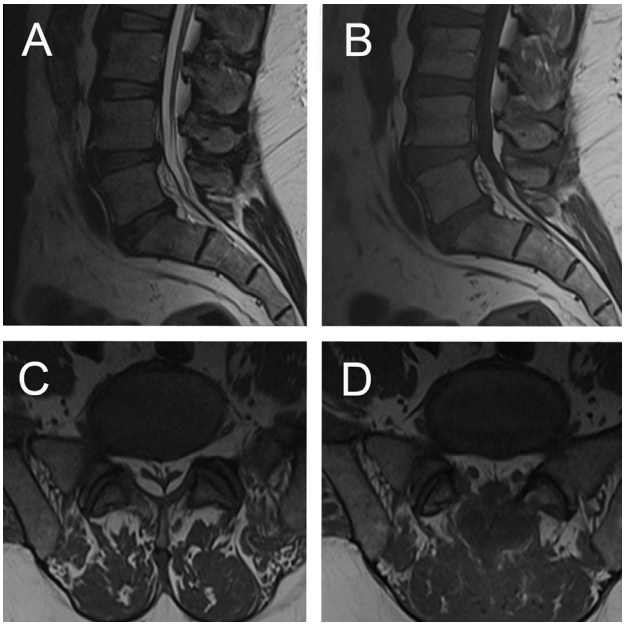

Fig. 1. Pre-operative sagittal T2-weighted MRI (A) appears to demonstrate a relatively normal central canal calibre, however significant reduction in canal diameter secondary to space occupying epidural lipomatosis is demonstrated on the T1-weighted sagittal image (B), as well as the "Y-sign" on T1-weighted axial views at L5/S1 (C). Post-operative T1-weighted axial MRI at L5/S1 demonstrates restoration of normal thecal calibre and shape, although a significant amount of epidural lipomatosis remains (D).

successfully with steroid cessation [8], weight reduction [6], or exercise and rehabilitation in one patient who was neither obese nor taking steroids [4]. Two of three patients who received surgical decompression in Lisai's series described urinary symptoms in addition to back pain and radiculopathy, however the duration of sphincter disturbance was not described, and may not have been acute [3]. In contrast, our patient had a very definite and rapid progression to bowel and bladder dysfunction, with early decompression, and an excellent outcome.

As always with less common conditions, a high index of clinical suspicion is important to make the correct diagnosis in a timely manner. An MRI must be performed with particular attention given to the T1-weighted images to demonstrate thecal compression from adipose tissue (Fig. 1B, C); the Y-sign on axial imaging clearly demonstrates extradural compression. Although epidural lipomatosis itself is not uncommon it may rarely be associated with significant nerve root compression amenable to surgical decompression, and therefore must not be dismissed as a clinically unimportant pathological entity. Our experience suggests that an excellent outcome can be achieved with early surgery when SEL presents with CES.

Conflicts of Interest/Disclosures

The authors declare that they have no financial or other conflicts of interest in relation to this research and its publication.

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http://dx.doi.org/10.1016/j.jocn.2013.09.026

Endoscopic endonasal transplanum transtuberculum resection of a large solid choroid plexus papilloma of the third ventricle

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ARTICLE INFO

Article history:
Received 11 September 2013
Accepted 29 September 2013

Keywords:
Choroid plexus papilloma
Endoscopic surgery
Skull base
Third ventricle

ABSTRACT

Choroid plexus papilloma (CPP) is a highly vascular solid or mixed solid-cystic tumor. Previously described resection techniques for the more common solid CPP in the third ventricle have all been through the transcranial route. The authors review the literature and describe a patient who, to their knowledge, is the first successful resection of a large, completely solid CPP of the third ventricle through an entirely endoscopic, extended transphenoidal approach. Using modern neuroendoscopic methods and closure techniques, a gross total resection was accomplished and a successful closure without postoperative cerebrospinal fluid leak was achieved despite the presence of preoperative hydrocephalus. For appropriately selected lesions, an extended endonasal skull base resection can be performed successfully for vascular tumors despite the presence of preoperative hydrocephalus.

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1. Introduction

Choroid plexus papilloma (CPP) is a benign intraventricular neoplasm, most often of the lateral ventricle in children [1], but favoring the fourth ventricle in adults [2]. CPP of the third ventricle has been described, both as a primary site [2] and as a site of metastasis along cerebrospinal fluid (CSF) pathways [3]. Grossly, these tumors are usually solid with cystic components, but may rarely be purely cystic [4,5]. Resection techniques for CPP of the third ventricle that have been described include combined transventricular neuroendoscopic and transcranial microsurgical approaches [6,7], and recently purely ventricular neuroendoscopic for a cystic CPP [4]. Resection of the solid form of this tumor through an endoscopic skull base approach has been considered challenging due its high vascularity. To our knowledge it has never been reported. The presence of hydrocephalus, often associated with this tumor, also has prevented surgeons from using the endoscopic endonasal route due to an increased risk of postoperative CSF fistula. In this case report, we describe the first total resection of a solid CPP of the third ventricle entirely through an endoscopic extended transphenoidal approach.

2. Case report

A 38-year-old woman with a history of right atrial CPP that had been resected 16 years earlier presented with worsening blurred vision, headaches, nausea, and photophobia. Visual field testing revealed a baseline left inferior homonymous quadrantanopsia, present since her initial resection and stable, with a superimposed new temporal field defect suggestive of chiasmatic compression. Papilledema was also present. The rest of her physical and neurologic exam was normal. An enhanced MRI study showed multiple avidly enhancing intraventricular lesions involving the right temporal horn, right atrium, body of the right lateral ventricle, and the third ventricle. The largest of these lesions was 4 cm, primarily in the third ventricle with minor extension into the suprasellar cistern, causing lateral displacement of the optic chiasm and obstructive hydrocephalus (Fig. 1). The other lesions were very small (<4 mm) and asymptomatic. The presumptive diagnosis of metastatic CPP of the third ventricle was made. Due to worsening vision and symptomatic hydrocephalus, surgical resection of the third ventricular lesion through an endoscopic extended transsphenoidal approach was planned. We believed an endoscopic endonasal approach would allow a more effective tumor resection along the long axis of the tumor compared with a subfrontal route.

Using a 0-degree endoscope, the inferior two-thirds of the superior turbinates were resected bilaterally. Bilateral posterior ethmoidectomies were performed for improved access to the sphenoid sinus. A septal flap was elevated and the sphenoid rostrum, posterior nasal septum, and intersphenoid septum were resected to connect both sphenoid sinuses. A high-speed drill was used to

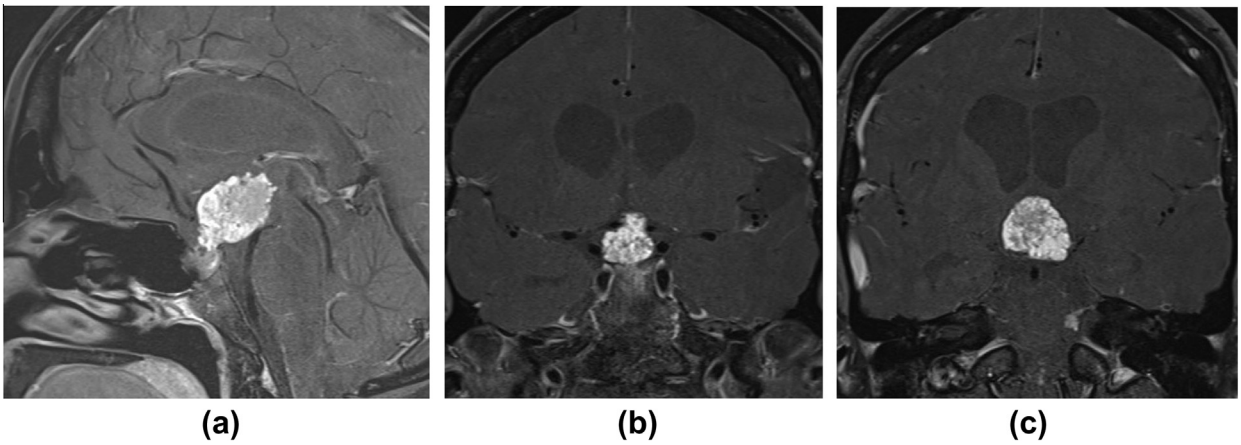

Fig. 1. Preoperative T1-weighted contrast-enhanced sagittal (a) and coronal (b) MRI demonstrate an avidly enhancing mass in the third ventricle extending into the suprasellar cistern.

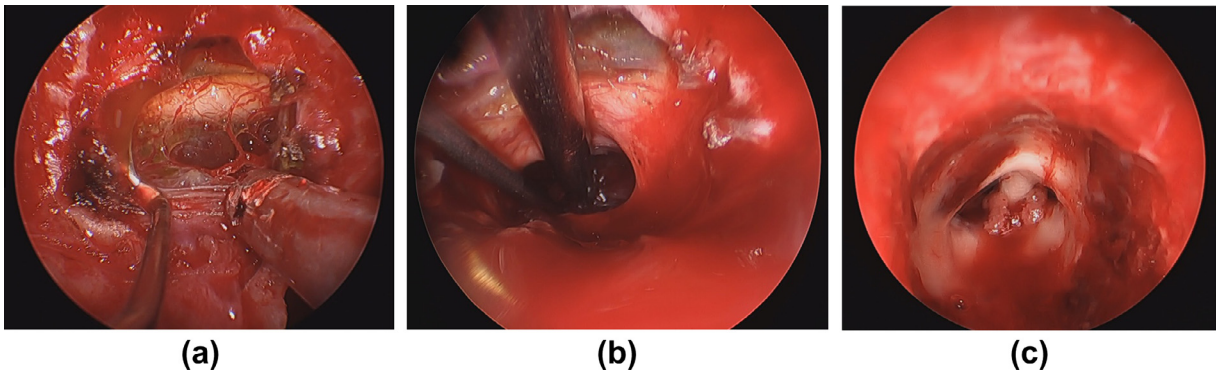

Fig. 2. A high-speed drill was used to remove the tuberculum sellae, posterior aspect of the planum, and the superior edge of the anterior sellar wall extending laterally to the level of the opticocarotid recesses. The intercavernous sinus was coagulated and the dura was opened, revealing the optic chiasm and the tumor protruding through the retrochiasmatic space (a). The small window in the retrochiasmatic space was used to remove the tumor microsurgically. Note the blood-filled surgical field due to the high vascularity of the tumor (b). At the end of the resection, a 45-degree endoscope allowed a complete resection of the superior pole of the tumor and revealed the bilateral foraminae of Monro (c). This figure is available in colour at www.sciencedirect.com.