EPIDERMOID TUMOR OF THE PONS

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SUMMARY

Epidermoid tumors originating from the brainstem are extremely rare. The authors report a patient with an intraaxial epidermoid tumor of the pons. The tumor involved most of the pons and had a small exophytic component.

Key words: epidermoid tumor, epidermoid tumor, brainstem, epidermoid tumor, pons.

INTRODUCTION

Epidermoid tumors originate from ectodermal remnants during the third to fifth weeks of embryonic life which corresponds to the time of neural tube closure. Its most common intracranial location is the basal cisterns including the cerebellopontine angle and parasellar cisterns. Epidermoid cysts involving the brainstem and purely intraaxial epidermoid cysts of the brainstem are rare [2, 3, 5, 6, 9-13, 15-17]. We report an additional case of intraaxial epidermoid tumor of the pons.

CASE REPORT

A 39-year-old woman presented with headaches and a left 7th cranial nerve deficit. On MR imaging, a lobulated mass was present involving most of the pons with a small left-sided exophytic component. It was hypointense on T1-weighted (figure 1a), and hyperintense on T2-weighted (figure 1b) images with presence of pontine edema noted on T2-weighted images (figure 1b). On T1-weighted images obtained after administration of intravenous paramagnetic contrast medium a relatively thin rim of enhancement was evident along the margins of the mass (figures 1c and 1d). Radiologically, the overall configuration of the mass was that of a tumor originating intraaxially from the pons with a small exophytic component. The tumor was partially resected and the histopathological diagnosis was consistent with epidermoid cyst.

DISCUSSION

Epidermoid tumors represent 0.2% to 1% of all primary intracranial tumors. The vast majority of intracranial epidermoid tumors occur intradurally in the subarachnoid cisterns [1-9, 11-13, 16-17]. Several reports dealt with epidermoids occurring in the brain parenchyma [7, 8]. With respect to the involvement of the brainstem, Calderelli et al. [3] reported two patients, and provided a review of the relevant literature. They cited that brainstem involvement is quite rare, and only 12 cases (11 epidermoids and one dermoid) have been reported. Only 6 of these 12 cases were purely intraaxial, whereas the others were located mainly in the prepontine cistern with an endophytic portion invading the brainstem [3]. Other reports dealt with epidermoids involving the brainstem to variable extent [2, 3, 5, 6, 9-13, 16]. With respect to our patient, the epidermoid tumor involved most of the pons with a small exophytic component left to the pons. Thus, this case was a purely intraaxial one. The tumor was T1-weighted hypointense and T2-weighted hyperintense. A relatively thin rim of marginal enhancement was evident and pontine edema was noted (figure 1). At surgery, the tumor was partially resected. With respect to the differential diagnosis, it has been reported that accurate MR imaging diagnosis of epidermoid tumors occurring in the brain parenchyma can be difficult as they may resemble astrocytomas, and other gliomas [10]. However, increasing experience with diffusion MR imaging has allowed greater accuracy in diagnosing epidermoid tumors, especially those located in the subarachnoid cisterns [1, 4, 13]. Although diffusion MR imaging was not available in our patient it can be suggested that detection of a restricted diffusion pattern (high-signal of the intacystic material on b=1000s/mm² images) in such a tumor would indicate the correct preoperative diagnosis. In addition, ADC (apparent diffusion coefficient) values would be low [1, 4, 13]. Also, FLAIR (fluid attenuated inversion recovery), and gradient-echo CISS (constructive interference in the steady state) images provide information about epidermoids since these tumors usually have a muddy appearance on such sequences [1, 4, 13].
REFERENCES


FIG. 1. – Epidermoid tumor of the pons. a) T1-weighted image reveals a hypointense mass involving most of the pons. b) T2-weighted image shows the mass to be hyperintense. It has a small exophytic component left to the pons. Note the presence of edema in the right part of the pons. c) T1-weighted image after intravenous contrast medium reveals relatively thin rim enhancement. d) Coronal T1-weighted image after intravenous contrast medium reveals thin rim enhancement.