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Intraventricular Broken Dermoid Cyst: A Case Report

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Abstract **Case Report**

Intracranial dermoid cysts are benign, slow, extra-axial, benign dysembryoplastic tumors. We report the case of a 29-year-old man who visited emergency rooms for sudden onset headaches. A cerebral CT showed a left basal frontal cyst formation of homogeneous fat density. MRI confirmed the fat content of the cyst and its intraventricular rupture. Histologically, dermoid cysts have a thick wall with possible presence of different appendages of the skin explaining the possibility of rupture during growth, even if rare. Imaging, based on CT and especially MRI, allows the positive diagnosis of this rupture. Conservative treatment may be considered for ruptured cysts where there is a risk of intraoperative vascular involvement, but with a risk of recurrence of rupture.

Keywords: Dermoid cyst, intraventricular, CT, MRI.

INTRODUCTION

Intracranial dermoid cysts are rare benign dysembryoplastic tumors of slow evolution, which usually develop in the posterior fossa, in extra axial. most often asymptomatic, they can be revealed by a mass effect or a rupture as is the case in our observation or the diagnosis was made by imaging.

OBSERVATION

29-year-old man, with no particular pathological antecedents, who consulted in the emergency room for sudden onset headache. The clinical examination was unremarkable and an emergency cerebral CT showed a left basal frontal cyst formation of homogeneous fat density (Figure 1). MRI confirmed the fat content of the cyst and its rupture, with dissemination of the fat content intraventricularly and in the subarachnoid spaces (Figure 2).

Fig-1: CT scan in axial section: Well-defined left frontal cystic formation of homogeneous fat density with fatty deamination in the right lateral ventricle

Fig-2: cerebral MRI, Sagittal T1 (a), Axial T1 (b), Diffuse (c) and sagittal T2 (d), left basifrontal intra-cranial expansive process, of fatty density (T1 and T2 hyper signal) and moderate hypersignal in diffusion with dissemination of fat content in intraventricular and subarachnoid spaces

DISCUSSION

Dermoid cysts are congenital ectodermal inclusions, of embryologic origin, accounting for less than 1% of intracranial expansive processes. They sit preferentially in supra and para-salvage, basi-frontal and in the posterior cerebral fossa [1].

Histologically, dermoid cysts have a thick wall (keratinizing epithelium) with possible presence of different appendages of the skin explaining the possibility of rupture during growth during their development [1]. However, this complication is rare, often spontaneous and clinically manifested by a variety of symptoms ranging from a simple headache to a meningeal syndrome [2].

Imaging, based on CT and especially MRI, allows the positive diagnosis of this rupture. In CT, the dermoid cyst is a well-defined, homogenous hypodense [3], not enhanced after injection, often with parietal calcification [4]. The rupture is often proven by the detection of fine lipid droplets disseminated in the subarachnoid spaces and sometimes intraventricular [5] as in our patient. In MRI, the dermoid cyst is visible in the form of a well-limited mass, of a generally heterogeneous, hyper-intense signal in T1, iso or hyper-intense in T2 and hyper-intense on T2 sequences FLAIR (fluid attenuated inversion recovery) [6]. The heterogeneity of the signal within the mass is due to the fatty, sebaceous and hairy content, and the T2 signal reflects the abundance of one of these components compared to the others [3].

The diffusion sequence shows a hyper signal within the lesion that would be due to a low water content with a moderately decreased ADC [7].

The main differential diagnosis is the epidermoid cyst which can be differentiated from the dermoid cyst by its signal which is close to that of the cerebrospinal fluid but also by diffusion sequences which show a less marked hyper signal of the dermoid cysts with an apparent coefficient of lower diffusion [7].

Conservative treatment may be considered for ruptured cysts where there is a risk of intraoperative vascular involvement, but with a risk of recurrent rupture [8]. In this case intravenous corticosteroid treatment may be proposed during the acute phase [2], In our case a conservative treatment was recommended with a follow-up programmed by MRI.

CONCLUSION

The dermoid cyst is a rare entity, its spontaneous rupture is exceptional and is manifested by a polymorphic and non-specific clinical picture requiring the use of imaging mainly MRI which allows the positive diagnosis of the lesion as well as its rupture, to specify the extent of the dissemination of the lipid content in the subarachnoid spaces, and to detect possible complications such as hydrocephalus, It also allows monitoring after treatment.

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