ejpmr, 2019,6(1), 332-334

SJIF Impact Factor 4.897

EUROPEAN JOURNAL OF PHARMACEUTICAL AND MEDICAL RESEARCH

www.ejpmr.com

Case Report

ISSN 2394-3211

EJPMR

SPONTANEOUS RUPTURE OF INTRACRANIAL DERMOID – A CASE REPORT

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Article Received on 27/10/2018 **Article Revised on 17/11/2018** **Article Accepted on 07/12/2018**

ABSTRACT

Intracranial dermoid cystic tumors are rare, benign, slow-growing masses. Imaging features of dermoid cyst are pathognomonic. Rupture of an intracranial dermoid cyst is a rare event with considerable associated morbidity. We present a rare case of intracranial rupture of a dermoid cyst with consequent dissemination of fat droplets into subarachnoid spaces.

KEYWORDS: Intracranial dermoid, rupture, fat droplets.

INTRODUCTION

Intracranial dermoid cysts are rare benign lesions and account for 0.04-0.7% of all intracranial lesions.[1] Rupture of a dermoid cyst with spillage of its contents into subarachnoid space and/or ventricles is a potentially serious complication that can lead to meningitis, seizures, cerebral ischemia and hydrocephalus.[2] The most common clinical presentation is that of headache and seizures. We present a case of ruptured intracranial dermoid cyst, analyzing the neuroimaging features and discussing the differential diagnosis.

CASE REPORT

A 25 year old female presented with headache in left parietal region for the past 20 days. The patient had no complaints of nausea, vomiting, altered mental status, or seizures. On presentation, the patient had a normal physical examination, including a complete neurological examination. NCCT of the brain revealed an extra axial hypodense lesion in middle cranial fossa showing peripheral calcification. The mean attenuation of the mass was -30 H.U. Few fat density foci were seen in the sulcal spaces of left frontal lobe. On MRI, the lesion was hyperintense on T1 weighted images, heterogeneous signal on T2 weighted images and hyper intense on FLAIR images. On DWI the lesion was hyperintense; however it was isointense to brain on ADC. On GRE few foci of blooming were seen. On post contrast imaging done after Gadolinium injection with fat suppression, there was signal drop from the lesion without any significant enhancement. Multiple T1 hyperintense foci were seen in the sulcal spaces of left frontal lobes. A diagnosis of ruptured dermoid with subarachnoid dissemination of dermoid contents was made.

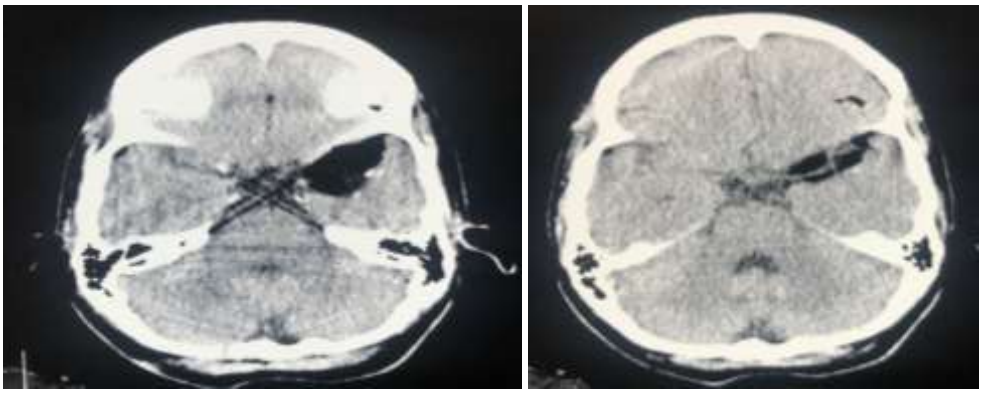

Figure 1: Non contrast CT of head revealed an extra axial hypodense lesion in middle cranial fossa showing peripheral calcification. The mean attenuation of the mass is -30 H.U. Few fat density foci are seen in the sulcal spaces of left frontal lobe.

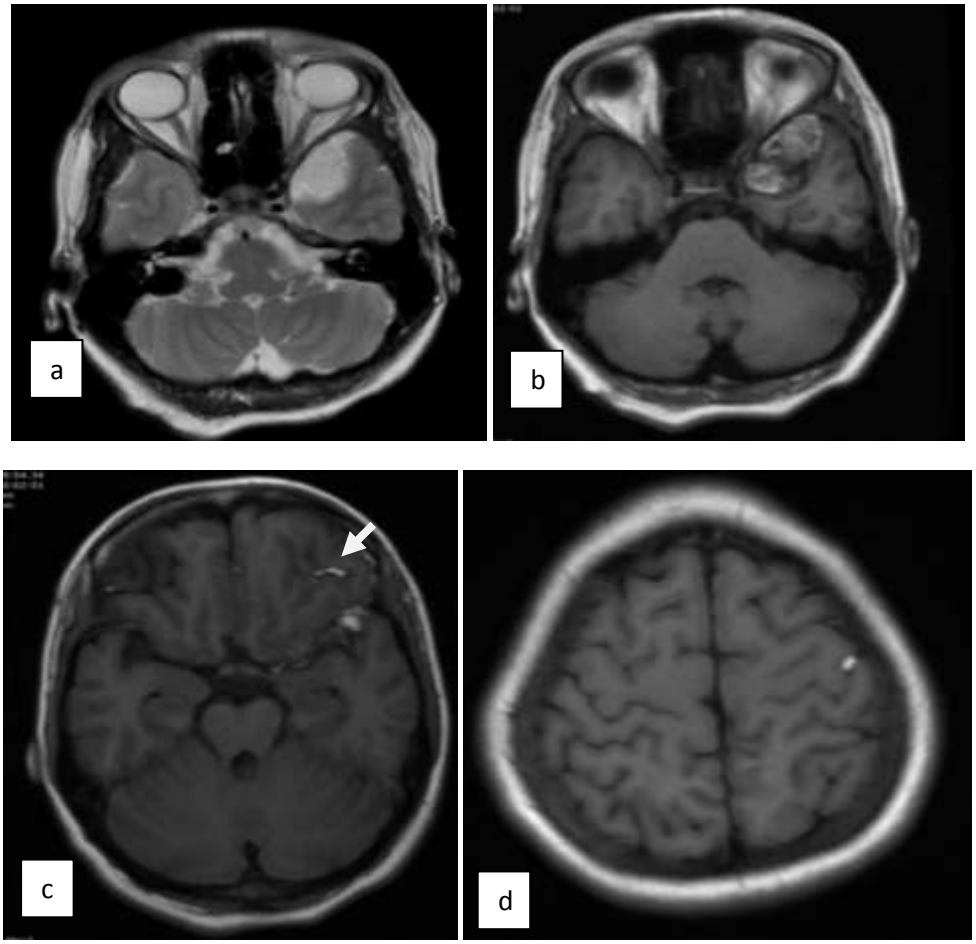

Figure 2: On (a) Axial T2W, (b,c,d) Axial T1W MR image the lesion is hyperintense on T1 weighted images, heterogeneous signal on T2 weighted images. T1 hyperintense foci are seen in sulcal spces of left frontal lobe (arrow in c).

DISCUSSION

Intracranial dermoid cystic tumors are rare, benign, slow-growing masses. They comprise 0.04-0.7% of intracranial tumors.[1] They are derived from ectopic epithelial cells that are part of the neural tube, which also explains their typical location close to the midline.[2] They are most often found in a sellar or para-sellar location as well as the frontonasal region and frequently reside near the skull base. Intracranial dermoids can also be found in the posterior cranial fossa within or in close proximity to the fourth ventricle. These lesions can also be found in the pineal gland fossa, in addition to a number of other less frequent intracranial sites.[3,4,5]

Supratentorial dermoids often present in the second or third decades of life, while posterior fossa dermoids typically present in the first decade of life as a consequence of mass effect exerted on the fourth ventricle with resulting hydrocephalus.[6] Although they are benign, slow-growing tumors, they may cause focal neurologic signs through encroachment of neurovascular structures and, rarely, rupture.[7]

Rupture of dermoid cyst is a rare phenomenon and it results in spillage of its contents into the ventricles and/or subarachnoid space. Dermoid cystic tumor rupture usually occurs spontaneously; however, cases of rupture secondary to closed head trauma or iatrogenic surgical complications have been reported.[4] Clinical presentation of cyst rupture can vary depending on the cyst location, and common symptoms include headache, seizures, cerebral ischemia with sensory and/or motor hemisyndrome, and aseptic meningitis.[8] Aseptic chemical meningitis may ensue with profound irritative effects from the disseminated cholesterol debris. Chemical meningitis is a relatively rare development and is reported in approximately 7% of cases of dermoid tumor rupture.[4]

Imaging features of intracranial dermoid tumors are virtually pathognomonic. These lesions have internal density characteristics consistent with fat (negative Hounsfield units). The dermoid wall is typically seen and can calcify. Occasionally the wall will at least partially enhance following the administration of contrast material. On MRI scans, dermoids will be hyperintense on T1-weighted imaging and heterogenous on T2-weighted imaging. On fat suppression images the cyst is hypointense in signal. When a dermoid tumor ruptures, fat droplets—appearing hypodense on CT or T1 hyperintense on MRI—may be seen scattered and floating within the nondependent portions of the

ventricular system and/or subarachnoid space. In the setting of complicating chemical meningitis, intense pial and ventricular ependymal enhancement may be detected after the administration of MRI gadolinium contrast.[2,6] If the internal fat content is relatively low, the lesion will reveal cerebrospinal fluid–like signal intensity. In such cases, fluid attenuation inversion recovery (FLAIR) is useful, in that the fat will appear hyperintense on a background of suppressed fluid signal.

Although the imaging appearance of dermoid tumors is characteristic, several other intracranial lesions must be considered in the differential diagnosis, such as epidermoids, teratomas, lipomas and occasionally arachnoid cysts. Teratomas are tridermal mass of pediatric age group seen in midline in supratentorial location.[9] Epidermoid cysts are benign, congenital inclusion cysts which show diffusion restriction on DWI.[10] Patients' age, clinical history, location of the lesion, presence of calcifications and low density on CT and demonstration of fat content on MRI help in making the definitive diagnosis of dermoid cyst. Also when an intracranial dermoid is detected radiologist should look for signs of rupture with high suspicion.

REFERENCES

1. Rubin G, Scienza R, Pasqualin A, Rosta L, Da Pian R. Craniocerebral epidermoids and dermoids. A review of 44 cases. Acta Neurochir (Wien), 1989; 97(1-2): 1-16.
2. Osborn AG, Preece MT. Intracranial cysts: radiologic-pathologic correlation and imaging approach. Radiology, 2006; 239(3): 650-664.
3. Berhouma M. Oiled brain and status epilepticus: intraventricular and sub-arachnoid rupture of a temporal dermoid cyst. J Med Cases, 2010; 1(3): 94–97.
4. Das CJ, Tahir M, Debnath J, Pangtey GS. Neurological picture. Ruptured intracranial dermoid. J Neurol Neurosurg Psychiatry, 2007; 78(6): 624–625.
5. Cha JG, Paik SH, Park JS, Park SJ, Kim DH, Lee HK. Ruptured spi-nal dermoid cyst with disseminated intracranial fat droplets. Br J Radiol, 2006; 79(938): 167–169.
6. Venkatesh SK, Phadke RV, Trivedi P, Bannerji D. Asymptomatic spontaneous rupture of suprasellar dermoid cyst: a case report. Neurol India, 2002; 50(4): 480–483.
7. Kim KS, Weinberg PE. Dermoid tumor. Surg Neurol, 1981; 15(5): 375-376.
8. El-Bahy K, Kotb A, Galal A, El-Hakim A. Ruptured intracranial dermoid cysts. Acta Neurochir (Wien), 2006; 148(4): 457-462.
9. Sandow BA, Dory CE, Aguiar MA, Abuhamad AZ. Best cases from the AFIP: congenital intracranial teratoma. Radiographics: a review publication of the Radiological Society of North America, Inc, 24(4): 1165-1170.
10. Kallmes DF, Provenzale JM, Cloft HJ, McClendon RE. Typical and atypical MR imaging features of intracranial epidermoid tumors. AJR Am J Roentgenol, 1997; 169(3): 883-887.