

The Dilemma of Choroidal Fissure Cyst and Seizure

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Editorial

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Choroidal fissure cyst (CFC) is a rare embryological entity presenting as cerebrospinal fluid (CSF) containing cysts at the level of the choroidal fissure. The literature is lacking articles discussing this topic, with only a few reports and series.¹⁻³ There are several theories exist to explain the mechanism of primary choroidal cysts development: 1) as a result of aberrant splitting and duplication in the arachnoid membrane as proposed by Starkman et al.² and Krawchenko and Collins,⁴ 2) in response to temporal lobe agenesis, resulting in forming a cyst in the subarachnoid space,⁵ and 3) from invagination of the vascular mesenchyme of the primitive choroid plexus into adjacent brain picked up an outer covering of glial tissue.⁶

Computed tomography (CT) and magnetic resonance imaging

(MRI) are used to differentiate between the CFC and other differential diagnoses of cysts located at the choroidal fissures including cystic neoplasm, dermoid/epidermoid cysts, and enlargement of the choroidal fissure due to focal temporal lobe atrophy.¹ CT scans show a well-delineated homogeneous low-density mass with attenuation characteristics similar to CSF without calcification or contrast enhancement. MRI signal characteristics are similar to CSF on all sequences. The cyst walls are thin and contrast enhancement, surrounding edema, and gliosis are absent.⁷ The coronal images are better to identify the relation between the cyst and the choroidal fissure.¹ The final diagnosis can only be made by histopathological examination. The cysts are usually small asymptomatic and dis-

Table 1. Summary of patients with choroid fissure cysts in the literature

No.	Study	Article type	Journal	No. of patients with CFC	Gender	Mean age at diagnosis (years)	Site of the CCF cyst	Presenting symptoms	Treatment
1	De Jong et al. ³ (2011)	Peer-review reports	World Neurosurgery	6	-	8.9	Rt: 5 Lt: 1	Headache: 3 cases Narcolepsy: 1 ADHD: 1 Spastic spasm: 1	Conservative management
2	Isolan et al. ¹¹ (2010)	Case report	J Epilepsy Clin Neurophysiol	2	M: 1 F: 1	19.5	Lt: 2	Seizure CP: 2	Conservative management
3	Arroyo and Santamaria ⁹ (1997)	Retrospective study	Epilepsin	9	-	31	Rt: 6 Lt: 3	Seizure: 8 CP, 1 GTC	NM
4	Millichap ¹⁰ (1997)	Case series	Neurology	1	M: 1	4	Lt: 1	ADHD/headache	Conservative management
5	Morioka et al. ¹² (1994)	Case report	Clinical Neurology and Neurosurgery	2	M: 1 F: 1	25	Rt: 1 Lt: 1	Seizure CP: 2	Conservative management

CFC, choroidal fissure cyst; CCF, choroidal fissure cyst; Rt, right; Lt, left; ADHD, attention deficit hyperactivity disorder; M, male; F, female; CP, complex partial; GTC, generalized tonic-clonic; NM, not mentioned.

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covered incidentally. Very rarely, they may cause seizures due to the mass effect on the temporal lobe.⁸

A literature review of this topic was conducted by searching human, English-language publications in MED-LINE (PubMed and Ovid), Google Scholar, and Cochrane Library from January 1, 1950 to June 9, 2020.

Table 1 shows the total cases of CFC mentioned in the literature. The current review showed 20 cases reported in the literature (Table 1). The right side was more common (60%) and seizure was the main presenting symptom in 13 cases (65%). The type of treatment was mentioned in 11 cases and all were managed conservatively. However, no information was available in the remaining nine cases. In the Sherman series,¹ 26 patients had cysts in or near the choroidal fissure of the temporal lobe, and it was bilateral in two patients. The report described five patients with a seizure disorder, none of them electroencephalographically correlated to the cyst location as the epileptogenic cortex usually was not adjacent to the patient's cyst.¹

Arroyo and Santamaria⁹ describe a series of 17 patients with epilepsy and an arachnoid cyst. Of which, nine were having CFCs. The authors suggested that these cysts are often incidental findings and do not necessarily reflect the location of the seizure focus. Millichap¹⁰ describes three patients with a temporal arachnoid cyst, one of them being a CFC, presenting with attention deficit hyperactivity disorder and headache. The author recommended neuropsychological tests for associated attention and learning deficits which might be observed in cases with CFCs.

CFCs are embryological lesions that are rarely described in the literature due to their benign nature and tendency to be asymptomatic. The CFCs do not always reflect the location of the seizure focus. In all the cases reported in the literature, surgical treatment was not considered. Follow-up with regular imaging will be suggested. However, the frequency of these surveillance scans and when follow-up can be stopped is still unknown.

Conflict of Interest

The author declares that they have no conflicts of interest.

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