

Encephaloclastic cyst

Poorly circumscribed areas of [parenchymal](#) destruction associated with cystic components.

Encephaloclastic [cysts](#) provoked by [intraventricular chemotherapy](#) are very uncommon.

Rare complication of a malfunctioning [methotrexate Ommaya reservoir](#) ^{1) 2)}.

Pathogenesis

The pathogenesis may result from alterations in CSF pulsations with retrograde flow of intraventricular chemotherapy into the brain parenchyma and subsequent development of a local chemical encephalopathy.

Mella et al. report two rare cases of encephaloclastic cyst with intraventricular [topotecan](#) use. The patients were diagnosed and treated at The University of Texas MD Anderson Cancer Center. They consented to the publication of their laboratory results and imaging studies for educational purposes.

The patients presented with metastatic cancers (breast/lung) complicated by leptomeningeal disease. Ommaya reservoirs were placed in both cases and patients were initiated on intraventricular topotecan at 0.4 mg twice weekly. After approximately 12 intraventricular treatments, both patients developed confusion, seizures and headaches. MRI of the brain demonstrated cystic dilatation of the brain parenchyma around the catheter that connects to the reservoir dome and delivers the drug to the intraventricular space. The catheter was surrounded by vasogenic edema. Catheters were removed and analyzed and were found to be intact. CSF analyses showed no evidence of infection or malignancy. Intraventricular topotecan was discontinued and both patients demonstrated sustained clinical and radiological responses.

These cases highlight an atypical complication of intraventricular use of topotecan with successful management ³⁾.

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Chowdhary S, Chalmers LM, Chamberlain PA. Methotrexate-induced encephaloclastic cyst: a complication of intraventricular chemotherapy. *Neurology*. 2006 Jul 25;67(2):319. PubMed PMID: 16864827.

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Lubomski M, Pell M, Lochhead A, Jude M. Encephaloclastic cyst: a rare complication of a malfunctioning methotrexate Ommaya reservoir. *Intern Med J*. 2018 Feb;48(2):224-226. doi: 10.1111/imj.13704. PubMed PMID: 29415363.

³⁾

Mella DB, Kamiya-Matsuoka C, Liao B, Tummala S, de Groot J. Recurrent encephaloclastic cyst induced by intraventricular topotecan. *J Neurol Sci*. 2015 Feb 15;349(1-2):52-3. doi: 10.1016/j.jns.2014.12.024. Epub 2014 Dec 24. PubMed PMID: 25598491.

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