Ventriculitis

Ventriculitis is inflammation of the ependymal lining of the ventricular system. Ventriculitis is a serious condition characterized by inflammation and infection of the ventricles, which are fluid-filled cavities within the brain.

Epidemiology

It is a rare but serious intracranial infection.

Uncommonly, ventriculitis is a complication of meningitis or occurs spontaneously in immunocompromised patients [1)].

Classification

Pyogenic ventriculitis.

Healthcare-associated ventriculitis.

Klebsiella pneumoniae ventriculitis.

Acinetobacter baumannii ventriculitis.

Nocardia ventriculitis.

Staphylococcus epidermidis ventriculitis.

Clinical features

The clinical course of ventriculitis is typically indolent and non-specific, and early diagnosis and treatment are important to improve prognosis.

Diagnosis

see Ventriculitis Diagnosis.

Treatment

see Ventriculitis treatment.

Outcome

The cure rate was 73.3%. Of note, the mean period to sterilize the CSF after appropriate IVT antibiotic treatment was 6.6 days. There were no incidents of seizure or chemical ventriculitis during this IVT therapy.

The findings of this study suggest that IVT antibiotic therapy is a useful option in the treatment of post neurosurgical GNBM or ventriculitis, especially for those with a treatment-refractory state [2].

Case series

Ventriculitis case series.

Case report

A 53-year-old previously well man who presented with a collapse after a 4-day history of severe non-specific headache and vomiting. His initial Glasgow Coma Score (GCS) was 7/15 (E1V1M5), temperature was 38.2 °C, and he was intubated. Empirical ceftriaxone and acyclovir were commenced for suspected encephalitis. Cranial CT revealed intraventricular hyperdense areas in bilateral occipital horns and hydrocephalus, suggestive of spontaneous hemorrhage (39–48 Hounsfield units) (Fig. 1). He was transferred to our Neurosurgery Unit. CT angiogram excluded intracranial vascular abnormalities. Blood tests showed neutrophilia (26.5 × 109 /l) and raised C-reactive protein (260.5 mg/l). Following extubation 4 h later, the patient's GCS improved to E4V1M6. Cerebrospinal fluid (CSF) from a lumbar puncture was turbid; opening pressure was low; glucose was 2.2 mmol (serum glucose 5.9 mmol); microscopy showed pleocytosis (4105 × 106 /l, polymorphs 92 %), and presence of Gram-negative diplococci. Nuclei acid test and polymerase chain reaction test confirmed Neisseria meningitides serogroup B. In retrospect, the intraventricular materials were suppurative substance. On day 2, the patient's GCS returned to 15. Tests for immunodeficiency, including HIV test, were negative. He completed a 10-day course of ceftriaxone. On day 10, a repeat scan showed complete resolution of the intraventricular purulent material. On day 12, his inflammatory markers normalized, and he was discharged with a full neurological recovery and returned to work 6 weeks later [3].

1)
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2)
Wang JH, Lin PC, Chou CH, Ho CM, Lin KH, Tsai CT, Wang JH, Chi CY, Ho MW. Intraventricular antimicrobial therapy in postneurosurgical Gram-negative bacillary meningitis or ventriculitis: a hospital-based retrospective study. J Microbiol Immunol Infect. 2014 Jun;47(3):204-10. doi: 10.1016/j.jmii.2012.08.028. Epub 2012 Nov 30. PubMed PMID: 23201321.
3)
Lo WB, Mitra R, Cadwgan A, Albanese E. Pyogenic ventriculitis and the 'lodge sign'. Acta Neurochir (Wien). 2016 Oct;158(10):1849-50. doi: 10.1007/s00701-016-2914-1. Epub 2016 Aug 19. PubMed PMID: 27541492.