Ventriculitis case series

Al Menabbawyet al. conducted a prospective controlled study in 33 patients with cerebral ventriculitis in which most of the cases were complications of CSF shunt operations. Patients were divided into two groups. Removal of the ventricular catheter whenever present was performed in both groups. The first group was managed by ventricular lavage/irrigation, while the other group was managed using conventional therapy by inserting an external ventricular drain. Both systemic and intraventricular antibiotics were used in both groups. The outcomes were compared regarding mortality rate, modified Rankin Scale (mRS) score, and duration of hospital stay.

The mean age of the study population was 5.98 ± 7.02 years. The mean follow-up duration was 7.6 ± 3.2 months in the conventional group and 5.7 ± 3.4 months in the lavage group. The mortality rate was 25% (4/16) in the lavage group and 52.9% (9/17) in the nonlavage group ($p = 0.1$). The mRS score was less than 3 (good outcome) in 68.8% (11/16) of the lavage group cases and in 23.5% (4/17) of the conventional group ($p < 0.05$). The mean hospital stay duration was 20.5 ± 14.2 days in the lavage group, whereas it was 39.7 ± 16.9 days in the conventional group ($p < 0.05$).

Ventricular irrigation together with antibiotics is useful in the management of cerebral ventriculitis and associated with a better outcome and shorter hospital stay duration compared to current conventional lines of treatment [1].

2016

Srihawan et al performed a retrospective study of adults and children with the diagnosis of healthcare associated meningitis or ventriculitis, as defined by the 2015 Centers of Disease Control and Prevention case definition, at 2 large tertiary care hospitals in Houston, Texas from July 2003 to November 2014. Patients were identified by infection control practitioners and by screening cerebrospinal fluid samples sent to the central laboratory. We collected data on demographics, clinical presentations, laboratory results, imaging studies, treatments, and outcomes. Results. A total of 215 patients were included (166 adults and 49 children). A positive cerebrospinal fluid culture was seen in 106 (49%) patients, with the majority of the etiologies being Staphylococcus and Gram-negative rods. An adverse clinical outcome was seen in 167 patients (77.7%) and was defined as death in 20 patients (9.3%), persistent vegetative state in 31 patients (14.4%), severe disability in 77 patients (35.8%), or moderate disability in 39 patients (18.1%). On logistic regression analysis, age >45 years (adjusted odds ratio [OR], 6.47; 95% confidence interval [CI], 2.31-18.11; $P \leq .001$), abnormal neurological exam (adjusted OR, 3.04; 95% CI, 1.27-7.29; $P = .013$), and mechanical ventilation (adjusted OR, 5.34; 95% CI, 1.51-18.92; $P = .01$) were associated with an adverse outcome. Conclusions. Healthcare-associated meningitis or ventriculitis is associated with significant morbidity and mortality [2].

2001

Review of the medical records from 1990 to 2000 revealed 17 cases (12 men, five women) that satisfied inclusion criteria of abscess (n = 3) and/or positive cultures or increased white cells and protein in ventricular (n = 12) or cisternal (n = 1) cerebrospinal fluid. In one case, the diagnosis of ventriculitis was based on the combination of bacterial growth in lumbar cerebrospinal fluid and follow-up imaging. Staphylococcus species and Enterobacter species were the most common

organisms. Two neuroradiologists independently evaluated imaging studies for hydrocephalus, ventricular debris, periventricular attenuation or signal abnormality, ependymal enhancement, and signs of meningitis or abscess. Sixteen studies in 11 patients were performed after the intravenous administration of contrast material.

Ventricular debris was detected in 16 (94%) of 17 cases and was irregular in 13 (81%) of 16 cases. Hydrocephalus was present in 13 (76%) of 17 cases. Periventricular hyperintense signal was present in most (seven [78%] of nine) cases with MR imaging and was most conspicuous on fluid-attenuated inversion recovery sequences. Ependymal enhancement was detected in seven (64%) of 11 cases in which contrast material was administered. Signs of meningitis (eg, pial or duraarachnoid signal abnormality or enhancement) were present in 13 (76%) of 17 cases. Three cases had imaging signs of abscess.

Ventricular debris was the most frequent sign of ventriculitis in this series. An irregular level was characteristic of debris in ventriculitis. Hydrocephalus and ependymal enhancement were less frequent signs. Detection of ventricular debris might facilitate diagnosis of pyogenic ventriculitis, a potentially fatal infection, and thus permit appropriate therapy [3].

1)
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