



Abstract

'XULQJ WKH ζUVW WKUHH PRQWKV RI OLIH *URXS % VWUHSWRFRFFXV RU \$JDOD associated with cerebrovascular accidents resulting from sepsis and infection of the central nervous system. This DUWLFOH SUHVHQWV WKH XQXVDO FDVH RI D IHPDOH LQIDQW ZKR ZDV DIÀLFWHG

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hydrocephalus, abscesses, or empyemas. When suspected, it is generally recommended to exclude intracranial hypertension before performing a lumbar puncture [8].

Neuroimaging helps find associated complications suspected from the clinical signs. Early findings from brain computed tomography can be mild ventriculomegaly and increased subarachnoid spaces [8]. MRI findings can detect brain abscesses and can vary with time. In the early cerebritis stage shows a poorly defined subcortical hyperintense zone that can be observed on T2-weighted imaging [9,10]. Lesions appearing hyperintense on diffusion-weighted imaging with apparent diffusion coefficient (ADC) values of <0.9 are likely to be brain abscesses, whereas hypointense lesions on diffusion-weighted imaging with ADC values > 2 are more likely to be non-abscess cystic lesions [9]. Contrast-enhanced T1-weighted studies demonstrate poorly delineated enhancing areas within the isointense to mildly hypointense edematous regions [9].

During the late cerebritis stage, the central necrotic area is hyperintense to brain tissue in the proton-density and T2-weighted sequences. The thick, somewhat irregularly marginated rim appears isointense to mildly hyperintense on spin-echo T1-weighted images and isointense to relatively hypointense on proton-density and T2-weighted scans. Rim enhances after contrast administration, peripheral edema and satellite lesions can be observed [9].

During both the early and late capsule stages, the collagenous abscess capsule is visible prior to contrast as a comparatively thin-walled, isointense to slightly hyperintense ring that becomes hypointense on T2-weighted MRIs [10], with marked diffusion restriction on diffusion-weighted images (high DWI signal and low values in the ADC maps within the abscess). If a cerebral abscess ruptures into the ventricular system, purulent material within the ventricle appears similar to that within the central abscess cavity, with diffusion restriction on DWI [9].

For treatment, use of broad-spectrum antibiotics should be established empirically. Antibiotics typically used are third or fourth generation cephalosporins (ceftriaxone or cefepime), vancomycin, and metronidazole. Subsequent treatment should be selected according to the pathogen and antibiotic sensitivity. The isolated pathogen usually responds to penicillin or ampicillin. The duration of therapy is four to six weeks for abscesses treated surgically and six to eight weeks for patients who only receive medication. When the abscess measures less than 2.5 cm in diameter or when there are multiple small abscesses, treatment with medication without surgical intervention is recommended. Patients with brain abscesses less than 2.5 cm treated only with antibiotics should see improvement [10].

Systematic review and meta-analysis show that, long-term 32% of patients with a history of group B streptococcal meningitis had