

“Brain abscess” in Cyanotic Heart Disease

Kelly Thune, B.S., M.A.T., C.A.S. Kelly Education Consulting, Fayetteville, New York, USA

Abstract:

Brain abscess is an intraparenchymal infection of brain parenchyma and begins with a localized area of inflammatory change referred to as ‘cerebritis’, progress to immature capsule stage and then to abscess, containing pus encapsulated by a vascularized membrane. The capsule serves to prevent the infective process from becoming generalized and it also create within it an inflammatory “soup” that may impede resolution of the infection. The incidence of brain abscess is about 8% of intracranial masses in developing countries and in cyanotic heart disease, its incidence varies from 5 to 18.7%. In patients with right-to-left shunts, absence of pulmonary phagocytic clearance of pathogens can occur and the ischemic injury from hypoxaemia and polycythaemia, produce low perfusion areas in the brain which may act as a nidus for infection and anaerobic streptococci are the most common agents isolated in cyanotic heart disease with brain abscess. All abscesses > 1 cm produce positive scans and CT brain appears to be adequate in most cases of brain abscess. Third generation cephalosporins (cefotaxime or ceftriaxone) combined with metronidazole for 2 weeks followed by 4 weeks of oral therapy is the medical treatment of choice for cyanotic brain abscess. Surgical techniques such as drainage via burr-hole, complete excision after craniotomy, migration technique and neuroendoscopic technique with freehand stereotaxy have also been practiced in the treatment of brain abscess.

Keywords: Brain abscess, right-to-left shunts, “triple high dose” antibiotic therapy, “migration” technique.