SUBJECT: Antibiotic Prophylaxis for Traumatic Pneumocephalus

PURPOSE: To facilitate appropriate management of patients with traumatic pneumocephalus

BACKGROUND: Skull fractures can place the central nervous system (CNS) into contact with the paranasal sinuses, nasopharynx, and/or middle ear. Common bacteria located in this area include *S. pneumoniae* and *H. influenzae*. Exposure of the CNS to these pathogens increases the risk for developing meningitis; however, the use of prophylactic antibiotics in this setting is controversial. Theoretical benefits of prophylactic antibiotics include maintenance of CSF sterility until dura closure and eradication of bacterial colonization. However, this may lead to the development of resistant pathogens. The efficacy of antibiotics is also hindered by poor penetration into the CSF in the absence of meningeal inflammation.

Meta-analyses describing the use of prophylactic antibiotics in the setting of basilar skull fractures have failed to show a decrease in the incidence of meningitis compared to no antibiotics. However, clinical data suggests that the presence of a CSF leak is an additional risk factor for developing meningitis, and patients who present with a CSF leak may benefit from antibiotic prophylaxis.

INDICATIONS FOR ANTIBIOTIC TREATMENT: Patients with traumatic pneumocephalus will receive antibiotic prophylaxis only when they have a documented cerebrospinal fluid (CSF) leak as evidenced by CSF otorrhea or rhinorrhea.

TREATMENT: Ceftriaxone 2 g every 24 hours for 48 hours

REFERENCES: