Meningitis following Cochlear Implantation: Pathomechanisms, Clinical Symptoms, Conservative and Surgical Treatments

Abstract:

Pneumococcal otogenic meningitis is a rare postsurgical complication that can develop following stapedectomy or after cochlear implantation. The bacterial infection can be fatal in some instances. A recent increase in the incidence of otogenic meningitis among cochlear implant wearers is of concern. The majority of meningitis cases are associated with a 2-component electrode manufactured by one cochlear implant company. The device with the added ‘positioner’ component has been withdrawn from the market (FDA Public Health Web Notification: Cochlear Implant Recipients may be at Greater Risk for Meningitis, Updated: August 29, 2002, www.fda.gov/cdrh/safety/cochlear.html). Not all cases have been subsequent to otitis media and symptoms have developed from less than 24 h up to a few years after implantation. The purpose of this paper is to review and discuss the pathogenesis, pathology/bacteriology and to elaborate on some clinical features of otogenic meningitis in implanted children and adults. Essential aspects of surgery, electrode design, and cochleostomy seal are discussed. Conclusions are drawn from the available data and recommendations are made for good practice in cochlear implantation and follow-up.