

The Importance Of Antibiotic Stewardship In The Management Of Brain Abscesses

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Background

The incidence of brain abscess appears to be increasing in recent decades. The risk factors are dental infections, chronic ear-nose-throat infections, immunocompromise and previous neurosurgery. Mortality until a few years ago was about 40% and although it has improved in recent years, the 30-day and 1-year mortalities remain high at 7% and 20%, respectively. Treatment of abscesses involves neurosurgical aspiration surgical drainage of the abscess usually followed by a prolonged course of antibiotics- 6-8 weeks of intravenous antimicrobials-.

Case Report

A 48-year-old woman presented to the emergency department for headache after treatment for odontogenic abscess. The brain CT showed an hypodense area in the left paratrigonal parieto-occipital region with edema, compatible with an abscess. He has been subjected to abscess drainage with culturing. We introduced empirical antibiotic therapy with Ceftriaxone, Metronidazole, Linezolid. A control brain CT showed persistence of small abscess. Due to persistence of fever Ceftriaxone was replaced with Meropenem. The drainage culture was positivity for *Sphingomonas paucimobilis*. After 10 days, when clinical and instrumental pictures showed a total resolution, the patient was discharged with Metronidazole and trimetoprim/sulfamethox-

azole for 4 weeks.

Case Report 2

A 62-year-old patient was admitted to our Internal Medicine Unit after a long hospitalization in Intensive care for surgical treatment of a fronto-parietal brain abscess, complicated by M.O.F. The brain CT showed a persistence of a small abscess. At the maxillofacial specialist visit, he presented apical granuloma of the 26th tooth. BAS was found to be positive for *Klebsiella KPC*, *Pseudomonas Aeruginosa*, *Candida albicans*; blood culture positive for *Providencia stuartii*. Patient was treated with cefiderocol for 14 days and subsequently he started trimetoprim/sulfamethoxazole for 4 weeks. Clinical and instrumental pictures showed a total resolution.

Discussion

Treatment of abscesses involves neurosurgical aspiration surgical drainage of the abscess usually followed by a prolonged course of antibiotics- 6-8 weeks of intravenous antimicrobials-. Some experts suggest early transition to oral antimicrobials after 1-2 weeks depending on clinical response especially in patients with mild and uncomplicated brain abscess. This strategy is useful to reduce risks associated with prolonged hospitalization and intravenous lines. Timely and targeted antibiotic therapy is essential to reduce morbidity and mortality.