

Cerebral Abscess and Oral Antibiotics

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ABSTRACT

Introduction: Intracranial abscess is a suppurative condition of the brain with high morbidity and mortality. It is common in the developing world and mostly with focus of infection anywhere in the body. Surgical removal and intravenous antibiotics are recommended treatments.

Case Presentation: A 13 years old girl, presented with a history of undocumented fever and headache for 10 days. She had a previous history which states that accidental ingestion of safety pin which was seen in left bronchus on imaging, developed brain abscess which was treated surgically and with oral antibiotics.

Conclusion: Intracranial abscess is a treatable but life-threatening condition. Conventional treatment is surgical drainage and removal of wall of abscess and six-week course of intravenous antibiotics, but in limited cases oral antibiotics can be equally effective.

Keywords: Safety pin; CT chest; Cerebral abscess

CASE PRESENTATION

This is a case old 13 years old girl with no known previous co-morbid, presented as an outpatient with a history of undocumented fever and headache for 10 days. She had a previous history stating accidental ingestion of safety pin which was seen in left bronchus, as shown in CT chest (Figure 1), which was later removed by rigid bronchoscopy.

MRI brain with contrast done which showed a large well defined abnormal signal intensity lesion measuring 3.2×3.4 cm involving left frontoparietal region with, it is associated with marked surrounding edema, appears as low signal intensity area in T1 weighted images and High-intensity area in T2 weighted images, in post-contrast images it shows well defined enhancing ring, the lesion showed restriction in diffusion-weighted images, the lesion is abutting the motor cortex and superior sagittal sinus in midline. Most likely representing the cerebral abscess (Figures 2 and 3).

As the lesion was near the motor cortex so burr hole craniectomy was done and abscess aspirated with the help of needle to avoid any deficit. Around 30 to 35 ml of pure pus was aspirated which was sent for bacterial culture and sensitivity.

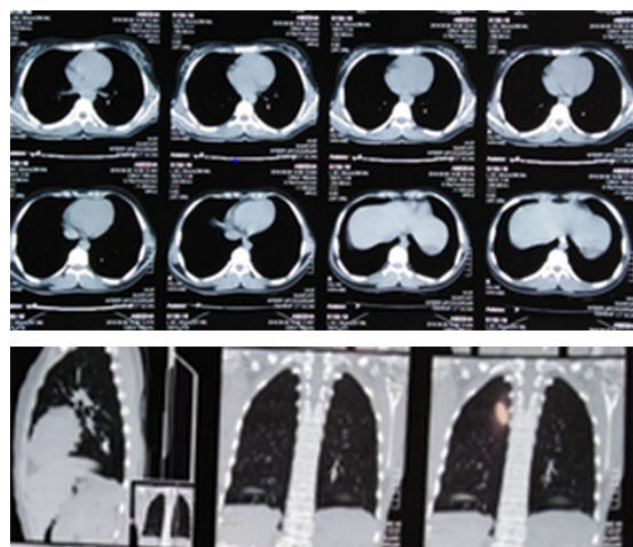


Figure 1: CT chest axial, sagittal and coronal views showing foreign body in the left bronchus.

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Culture turned out to be negative and she was started on oral antibiotics which are Cefotaxime and Metronidazole because of severe financial constraints and discharged to be followed in clinic. Oral antibiotics were given for 3 weeks. Post-op scans were done which showed complete resolution of abscess as shown in Figure 4.

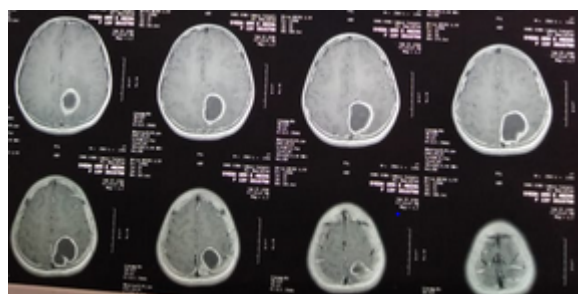


Figure 2: Showed well-defined ring-enhancing lesion measuring 3.2 × 3.4 cm involving left frontoparietal region.

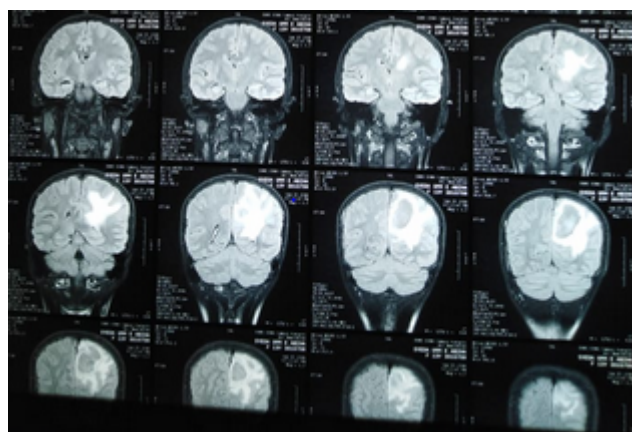


Figure 3: Showed restriction in diffusion-weighted images.

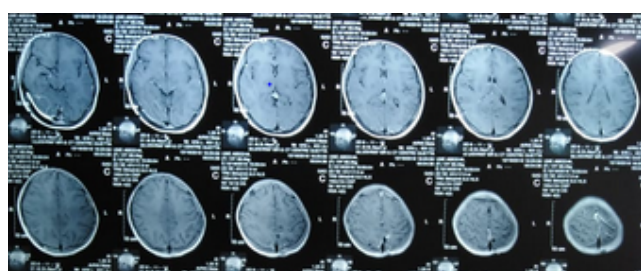


Figure 4: Postoperative contrast axial images showing complete resolution of abscess.

DISCUSSION

Cerebral abscess is life-threatening infection of the brain, with confined areas of suppuration in brain tissue [1]. It is commonly seen after trauma or iatrogenic in origin or can spread from a septic focus anywhere in the body [2]. Initially the rate of morbidity and mortality was very high but with advancement in imaging and antibiotics mortality rate has reduced up to 24% [3]. It consists of around 8% of intracranial space-occupying lesions in the developing world [4]. The most common sites of cerebral abscesses are the temporal lobes (42%) and cerebellum (30%) [5].

Even with the advances in imaging, operative techniques, neuroanesthesia, microbiological isolation techniques, and antibiotic therapy, bacterial brain abscesses can be a fatal entity [6]. Removal of primary foci for treatment is necessary [7]. The causative organism may vary according to age, geography, underlying medical and surgical conditions and mode of transmission [8]. The most common organism is *Streptococcus*. The male to female ratio varies from 1.3:1 to 3.0:1 [6,9,10]. Nausea, vomiting, headache, fever and altered consciousness are most common clinical presentations [7,11]. A history of otitis media, lung infection and cyanotic heart disease can be present in patients with cerebral abscess. As in this case the source of infection seems to arise from lung.

The first operative procedure of brain abscess was performed in 1752 [12]. The initial therapy starts with broad-spectrum antibiotics which blood-brain and CSF barriers in adequate concentrations and after the pus is drained the antibiotic should be converted according to its sensitivity. Vancomycin, third-generation cephalosporin, and Metronidazole are recommended intravenously for at least 6 weeks. If culture is negative then continue broad-spectrum antibiotics according to the anatomical location and likely primary source of infection [13].

In our case needle aspiration of abscess cavity was done because the abscess was just adjacent to the motor cortex of dominant side and complete removal of abscess could have caused the neurological deficit. By far our knowledge, no case has been reported in which cerebral abscess was cured completely with oral antibiotics alone without any residuals and any neurological deficit. As in our case, oral antibiotics were given due to severe financial constraints of the patient and in follow up imaging the abscess was completely disappeared.

Although the recommended treatment is a triple regime through intravenous access in some cases oral antibiotics can be as effective as intravenous antibiotics.

CONCLUSION

An intracranial abscess is a treatable but life-threatening condition. Conventional treatment is surgical drainage and removal of wall of abscess and six-week course of intravenous antibiotics, but in limited cases oral antibiotics can be equally effective.

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