



Transcranial Transdural Infection Resulting in Cerebral Abscess Following Bee Sting

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Introduction

Honey bee stings are known to produce local and systemic allergic and inflammatory phenomena via multiple potent chemical mediators. This includes remote neurological disorders such as stroke and encephalitis. However transcranial spread from a scalp bite producing osteomyelitis and a subjacent intracranial abscess is a previously unrecognized complication.

This case report describes a young girl who presented with a right frontal brain abscess and frontal osteomyelitis two weeks following a bee sting to the forehead.

Methods

A 12 year old girl at play was stung by a honeybee (*Apis cerana*) over the forehead. Ten days later she presented with persisting local erythema, fever, seizures and altered sensorium. A CT scan revealed a large right frontal intracerebral abscess contiguous with a small area of eroded frontal bone (Fig.1&2). The frontal sinuses were rudimentary on CT. She had normal results on hematological, biochemical and HIV testing. A diagnosis of frontal osteomyelitis with subjacent brain abscess secondary to bee sting was made and the patient was taken to the operating room.

Results

A right frontal craniotomy was performed. At incision the scalp was edematous and there was a small pocket of pus leading to a very focal area of osteomyelitic frontal bone through which copious amounts of non-odorous, creamy pus extruded out. Following craniotomy a focal dural breach beneath the eroded bone was identified. Durotomy was followed by total excision of a well-formed intracerebral abscess. There was no retained stinger. No frontal sinuses were identified at surgery. The bone flap was not discarded since the area of osteomyelitic erosion was very focal. Cultures grew non-fermenting Gram-negative bacilli sensitive to various antibiotics. She received 6 weeks of antibiotic therapy and was discharged uneventfully.

Conclusions

This case adds to the literature of the potential neurological complications related to honeybee sting and the importance of prompt care according to established neurosurgical principles in achieving an optimal patient outcome. It also adds to the list of potential causes of cerebral abscess formation as a result of direct transcranial transdural spread from an insect bite to the scalp.

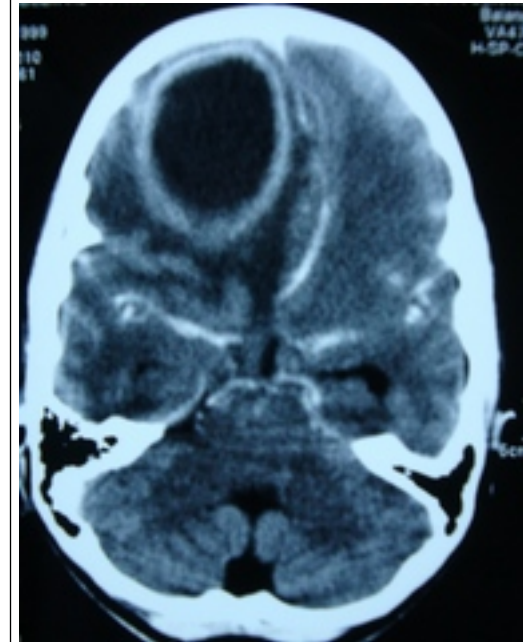
Learning Objectives

By the conclusion of this session, participants should be able to recognize that honeybee stings to the scalp can cause subjacent calvarial osteomyelitis and brain abscess and excellent results may be expected by a standard common sense approach.

References

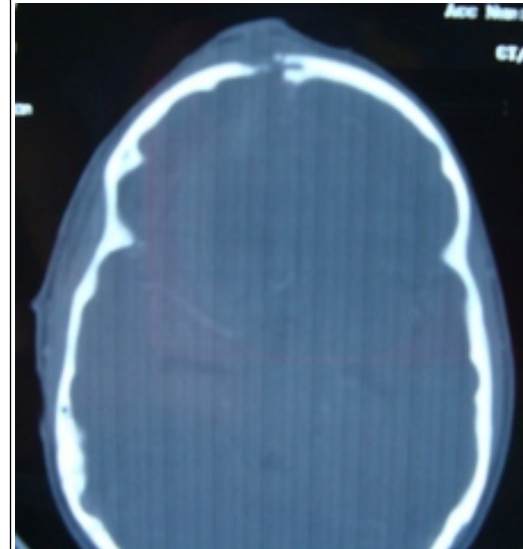
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Fig.1



Large frontal parenchymal abscess

Fig.2



Focal frontal osteomyelitis