

CHRONIC EPIDURAL EMPYEMA POSITIVE FOR
Achromobacter xylosoxidans AFTER SEVERE ORBITAL
TRAUMA

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Chronic epidural empyema positive for *Achromobacter xylosoxidans* after severe orbital trauma

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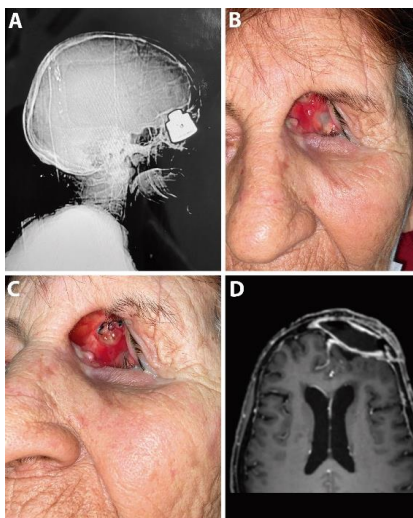
INTRODUCTION

Epidural empyema refers to an infection within the epidural space in any part of the brain or spinal cord.(1) Cranial epidural empyemas (EDE) may result from different causes, including rhinosinusitis, trauma, or post surgery. Our patient had an atypical asymptomatic presentation caused by an uncommon bacteria called *Achromobacter xylosoxidans*. We are not aware of any cases involving a chronic occult empyema caused by orbital trauma.

CASE REPORT

A 70-year-old female presented with a severe orbital deformity resulting from the explosion of a pressure cooker. The explosion propelled the venting valve of the cooker into her anterior cranial fossa through the right orbit (Figure 1A). The trauma occurred 2 years ago during the COVID 19 pandemic in Brazil. At that time, only the frontal bone fracture was repaired by a neurosurgeon. Six months after the accident, she noticed persistent mucopurulent secretion from her socket. She denied experiencing fever, headaches, or any neurological symptoms. Upon examination, the medial half of her right upper eyelid was missing, and the contents of the orbital cavity were limited to remnants of the globe (Figure 1B). A bony defect with silk stitches was visible on the orbital roof (Figure 1C). Magnetic resonance imaging T1W contrast enhanced of the orbits revealed a large epidural empyema in the left frontal region with thickened walls (Figure 1D). The empyema was drained through a coronal approach, and the orbit was obliterated with the temporalis muscle covered by flaps from the anterior lamella of the upper and lower lids.

FIGURES, TABLES AND GRAPHICS



DISCUSSION

EDE may occasionally develop after a craniotomy or cranial fracture. However, Nathoo et al., in a review of 82 cases, attributed paranasal sinusitis as the primary cause (64.6%). The initial lesion typically arises in the frontal sinus and can extend into the extradural space, forming an EDE (2). It may also be found in conjunction with osteomyelitis, with *S. aureus* being the more common isolate (3). In our case, the patient tested positive for *A. xylosoxidans*, a Gram-negative bacterium widely distributed in the environment. It is primarily associated with healthcare-associated infections or immunosuppressed patients (4). This led us to question whether the infection was nosocomial or the result of trauma.

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