Case Report
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Orbital cellulitis and paranasal sinusitis with intracranial and subgaleal extension following trivial fall

Cellulite orbitale et sinusite paranasale avec extension intracrânienne à la suite d'une chute banale

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Abstract:

Orbital cellulitis is a rare sequala of orbital trauma, and usually presents with unilateral or bilateral progressive proptosis. Diagnosis is based on clinical details and can be confirmed by CT scan. Early and aggressive management of this life-threatening condition with appropriate antibiotics is gives good functional outcome.

Key words: Orbital cellulitis, orbital fracture, proptosis

Résumé

La cellulite orbitale est une répercussion rare du traumatisme orbital, et elle se manifeste habituellement par la proptose progressive unilatérale ou bilatérale. Le diagnostic est basé sur les détails cliniques et peut être confirmé par la scanographie tomographique. Cette maladie potentiellement mortelle peut connaître des aboutissements fonctionnels si on lui oppose une gestion immédiate avec les antibiotiques appropriés. ***Mots-clés:*** Cellulite orbitale, fracture orbitale, proptose.

Introduction

Orbital cellulitis is a rare complication of orbital fracture following trauma.[1-3] Diagnosis is based on clinical details and can be confirmed radiologically as timely and aggressive management will prevent morbidity and even mortality.[2] In the present case report, a child developed severe orbital cellulitis associated with paranasal sinusitis with intracranial and subgaleal extension; he was treated conser-vatively with good outcome.

Case Report

An18-month boy presented with a history of fall from buffalo two weeks back while he was playing. Following the fall he was apparently well for next three days when he started developing progressive bilateral proptosis and difficulty in breathing through nose with purulent discharge. This was associated with high grade fever and cough for which he was started with injectable antibiotics. Following this his fever subsided but the proptosis persisted. His general and systemic examinations were normal. His neurologic examination showed that he was irritable and crying excessively but there were no focal deficits. There were no meningeal signs. Local examination revealed bilateral severe non-pulsatile proptosis, purulent discharge with conjuctival chemosis and watery discharge through the nose (figure-1). There was a warm scalp swelling and tenderness over left temporal region ex-tending over the left mastoid region, but there were no bruits. Blood investigations were normal and culture did not yield any growth. Cerebrospinal fluid examination was normal. CT scan of the brain with orbital cuts showed extensive hyperdens lesion involving both orbits, left temporal fossa and subgaleal plane in left temporal region (Figure-2). All the lesions were enhancing after contrast administration suggestive



Fig. 1: Extensive bilateral proptosis, periorbital & forehead oedema, purulent discharge with conjuctival chemosis, nasal discharge and mouth breathing.

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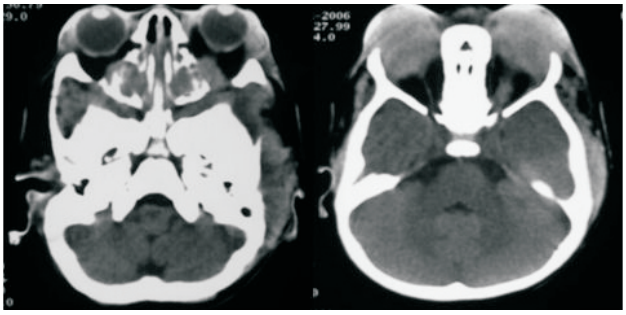


Fig. 2: Plains CT scan showing hyperdense lesion involving paranasal sinuses, both the orbits, left temporal fossa posteriorly, hyerdensity in the posterior fossa and extracranial subgaleal involvement on left side

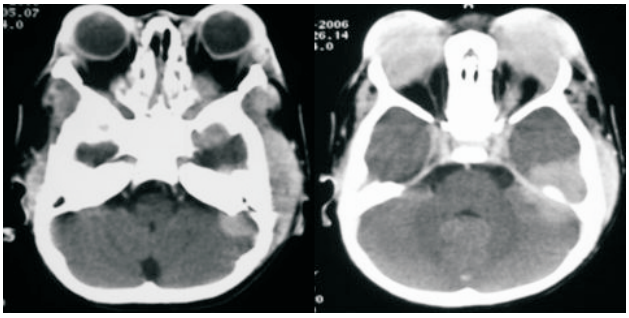


Fig. 3: All the lesions were enhancing after contrast enhancement

of inflammatory pathology (Figure-3). Child was started on high dose of broad spectrum antibiotics (Ceftriaxone, Vancomycin and Metronidazole) with anti-inflammatory measures. He responded well to the treatment and improved remarkably (Figure-4)



Fig. 4: Follow up photograph showing resolution of proptosis after a course of antibiotics

Discussion

Paranasal sinus disease is the commonest predisposing cause for orbital cellulitis following trauma, especially in the pediatric age group.[1-3] Sinusitis may commence 1 to 2 weeks before and as late as 5 weeks after orbital injury.[1,2] Culture of infected paranasal sinuses or pus from abscesses is most likely to yield significantly positive result however blood cultures are not helpful.[2,4] Streptococcus species and Staphylococcus species are the most commonly isolated bacterial pathogens. Other microbes include mixed anaerobes and Clostridium species.[2,4,5] Following orbital fracture micro-organisms usually gain entry through the opened venous channels into the periorbital veins and gradually invade the cavernous sinus and other venous sinuses as in the present case.[3] As soon as a diagnosis is suspected on clinical grounds patient should be started on broad spectrum intravenous antibiotics with gram negative coverage.[1,2,4] Intracranial involvement should be suspected in any patient age 7 years and above with preseptal or orbital cellulitis associated with orbital subperiosteal abscess, Pott's puffy tumor, concurrent sinusitis, complaints of headache, and continuing fever despite intravenous antibiotics.[5] Basically patients do not require surgical intervention unless there is progressive involvement of the optic nerve after 24 to 36 h of intravenous antimicrobial therapy.[4] Surgery may be required to drain orbital abscess or in non-resolving cellulitis to drain the paranasal sinuses.[1,2] Fracture repair, if indicated, should be delayed, particularly if an alloplastic implant is used.[1,5] Prophylactic oral antibiotics after the fracture do not prevent the orbital cellulitis or abscess formation.[1,5] Timely and aggressive intervention is associated with excellent outcome including visual function as in the present case.[2]

References

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