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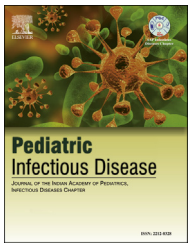

Case File

A three-year-old female child with peri-orbital cellulitis

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Dr. Sumanth Amperayani

This is a 3 year old female child weighing 13 kg, who was previously well. She was born to parents of non-consanguineous marriage and appropriately immunized till date according to the government immunization schedule. Everything started with small ulcer with over right upper eyelid 3 days ago followed by swelling of the right peri-orbital region for the past 2 days and fever for the past 1 day. She looks sick and febrile (temp. 103 °F) but is hemodynamically stable. *See* Fig. 1.

This looks like acute preseptal cellulitis of the right side. Would you like to consider any other differential diagnosis sir?

Dr. S. Balasubramanian

There are several entities to be considered in the differential diagnosis of preseptal cellulitis. *See* Table 1.[1] But in considering these, several factors like age of presentation, severity and acuteness of presentation and other clinical parameters like cat's eye reflex etc. have to be borne in mind.

Dr. Dhanalakshmi. K

We had ordered for certain basic investigations which are available now sir. CBC is showing leucocytosis (19400 cell/mm^3) with neutrophil predominance (P 88 L12) and normal platelet count (2.8 lakhs/mm^3). Renal function tests are normal. The coagulation work up (PT and aPTT) is normal. Cultures of blood and pus from the ulcer over the upper eyelid are awaited. I would like to start on Ceftriaxone, Clindamycin and Metronidazole sir. Are we right in doing so empirically?

Dr. S. Balasubramanian

Multiple regimens have been proposed for empirical treatment of preseptal cellulitis.[2–7] But most of these studies were

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Fig. 1 – The image shows the face for the patient at initial presentation. It shows more oedema on the right side with facial cellulitis and complete occlusion of the palpebral fissure.

done a long time ago and in the present era of multi drug resistant bugs emerging even from community, I feel we are right in starting the above 3 antibiotics to cover Gram positives, Gram negatives and anaerobes. We can step down once we have a bacteriological diagnosis.

Dr. Narayanan

Apart from the above investigations sir, I had asked for a CT scan of the orbits and face keeping in mind the proximity of the pathology to brain and carotids (see Fig. 2). The CT is reported as – Preseptal cellulitis. Large extra cranial soft tissue swelling in the bilateral frontal and periorbital regions (right > left) extending into the right temporoparietal and occipital regions along with swelling over the right zygomatic and parotid regions. Swelling is limited to the preseptal spaces of both orbits and doesn't have any intracranial spread. What are the indications of imaging in preseptal cellulitis sir and which is the imaging of choice?

Table 1 – Differential diagnosis of preseptal cellulitis.[1]

Rhabdomyosarcoma
Retinoblastoma
Orbital pseudotumour (idiopathic orbital inflammation)
Peri-ocular tinea
Cellulitis, Orbital
Conjunctivitis
Dacryoadenitis
Dacryocystitis
Dermatitis, Contact
Herpes Simplex
Herpes Zoster
Hordeolum

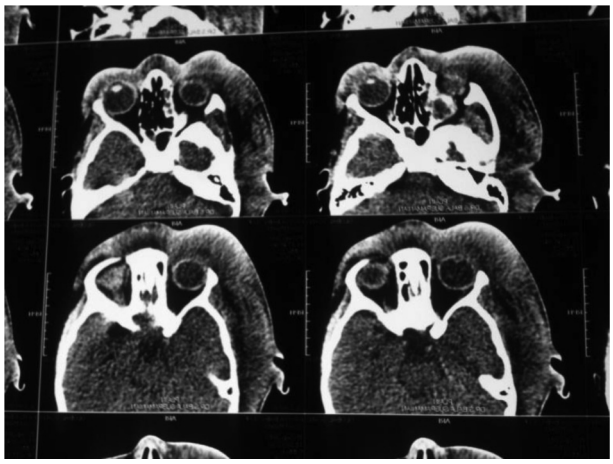

Fig. 2 – Preseptal cellulitis. Large extra cranial soft tissue swelling in the bilateral frontal and periorbital regions (right > left) extending into the right temporoparietal and occipital regions along with swelling over the right zygomatic and parotid regions. Swelling is limited to the preseptal spaces of both orbits and doesn't have any intracranial spread.

Dr. S. Balasubramanian

Paediatric preseptal and orbital cellulitis are infectious disorders that result in periorbital inflammation. Preseptal cellulitis is often associated with breaches in the skin barrier whereas orbital cellulitis is commonly associated with paranasal sinusitis. Orbital cellulitis may be associated with subperiosteal abscess. It is important to distinguish between preseptal from orbital cellulitis and diagnostic imaging plays a pivotal role here.[8] But keeping in mind the risk of exposure to radiation, you have raised a very important question, which I will answer from the literature.

Computerized tomography (CT) scan is the most commonly recommended imaging study for those suspected of having orbital cellulitis.[9] The use of contrast media increases the sensitivity and specificity of a given study and is recommended when possible.[9] Diffuse and localized postseptal inflammation may be observed in the setting of bacterial orbital cellulitis. Localized inflammation in the form of abscess may be intra- or extra cranial. Such inflammation may also develop between the bone and periorbital region, resulting in a subperiosteal abscess. Radiation exposure is of concern, especially in the paediatric population and has been the subject of research.[10] The clinical utility of a CT imaging study in such situations far outweighs the risks of limited radiation exposure.[11] Dr. Sumanth can you look up literature and say if anything else is contributory here.