Masquerading Orbital Abscess: A Case Report

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Introduction: Any purulent collection in the orbit is known as an orbital abscess.[1-2] It typically follows an infection of the orbital soft tissues (orbital cellulitis). Classic clinical findings include fever, erythema, proptosis, chemosis, ptosis, restriction of and pain with ocular movement, reduced visual acuity and an afferent pupillary defect.[1-4] Orbital cellulitis/abscess is the most common cause of acute-onset proptosis in children.[3,4] The differential diagnoses of orbital cellulitis include orbital trauma, for which there may not be a reliable history in children; nonspecific orbital inflammation; benign orbital tumors such as lymphatic malformation and hemangioma; as well as malignant tumors such as rhabdomyosarcoma, leukemia, and metastases.[1]

Rhabdomyosarcoma is the most common primary orbital malignancy in children.[1,5,7,8] This makes it a particularly important differential of orbital cellulitis in addition to its classic presenting picture of sudden onset, rapidly progressive unilateral proptosis. It is associated with marked ocular adnexal inflammatory response in 60% of cases, thereby closely imitating orbital cellulitis.[5-7]

Herein, we report a case of orbital cellulitis with abscess that mimicked rhabdomyosarcoma in an eleven-year old boy with rapid-onset unilateral proptosis.

Case Report: An eleven-year-old boy presented to the eye clinic triage of the University of Calabar Teaching Hospital with a 2-week history of painless, rapid-onset nonaxial proptosis in the left eye. There was no preceding or associated history of fever, trauma, upper respiratory tract infection, sinusitis or immunosuppression. Examination revealed a non tender mass occupying the inferior orbit associated with mild periorbital edema and conjunctival hyperaemia. A clinical diagnosis of rhabdomyosarcoma was made. He was admitted for joint management by the paediatric ophthalmology and oculoplastic teams. Baseline investigations (Full Blood Count with differentials

Figure 1: Clinical photograph showing draining of greenish pus from left anterior orbit

(FBC), Liver Function Test, Serum Electrolytes/ Urea/Creatinine) and Computerised Tomography (CT) of the head and orbit were requested. During review the next day, history was unchanged, however, on palpation, the mass inadvertently ruptured releasing about 4mls of green, non-foul smelling pus (Figure 1). This was sent for microscopy/culture/sensitivity and grew *Staphylococcus aureus*. FBC showed mild neutrophilia but radiologic imaging was not performed due to financial constraints. A definitive diagnosis of orbital cellulitis with abscess was made, broad-spectrum antibiotics and subsequent adjunct anti-inflammatory therapy yielded excellent clinical resolution.

Discussion: In our patient, the subacute course of the illness, the absence of the typical periocular and systemic features seen with orbital cellulitis especially fever and the lack of radiologic imaging resulted in an initial misdiagnosis. It is therefore pertinent that the clinician should always be aware of the low reliability of the common clinical features of orbital disease (proptosis/dystopia; swelling or discoloration of the eyelid; palpable subcutaneous mass) in making definitive diagnoses.[1]

Green pus is usually associated with *Pseudomonas aeruginosa* infections and occurs as a result of the cytotoxic pigment pyocyanin which the organism produces. It has however, been documented that green tinged pus is also produced in infections in which large amounts of myeloperoxidase (MPO), an intensely green antibacterial protein, with microbicidal action against *S aureus*, is produced by inflammatory cells. [9, 10]

In conclusion, although the diagnosis of orbital cellulitis is clinical, laboratory tests, orbital imaging and biopsy may be required to confirm the presence of abscesses, tumors and even to exclude masquerade syndromes.[2]

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