

INFECTIOUS RETINITIS AND CENTRAL RETINAL ARTERY OCCLUSION SECONDARY TO ORBITARY CELULLITIS



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PURPOSE

To report a rare case of multiple serious and simultaneous ocular complications of OC: infectious retinitis with retinal necrosis and central retinal artery occlusion leading to loss of vision.

INTRODUCTION

Orbital cellulitis (OC) is an infection of the orbital tissues, and the most common type of acute orbit in childhood and adolescence and the third most common in adults. OC is, in most cases, secondary to sinusitis. The thin thickness of the papyraceous lamina of the ethmoid provides a propitious environment to spread infections in this site.

The diagnosis of OC is based on clinical criteria and radiological confirmation by Computed Tomography (CT). Although OC is uncommon, its complications are serious and frequent, and can lead to blindness and / or death. Possible complications of orbital infection are sudden visual loss, upper orbital fissure syndrome, orbital apex syndrome, endophthalmitis, cerebritis, meningitis, cavernous sinus thrombosis, subdural empyema, sepsis and may even lead to death.

CASE REPORT

16 yo female, was referred to Hospital Santo Antônio, with a history of productive cough, nasal discharge and fever for 10 days She was evaluated and antibiotic therapy with azithromycin was started. However, she evolved 4 days after with edema and periorbital erythema of the right eye, associated with proptosis, ophthalmoplegia, bloody secretion, and pain. Hospitalization was performed and Ceftriaxone, Oxacillin and Metronidazole were started.

Ophthalmological examination was performed. Visual acuity was light perception (LP) in the right eye (RE) and 20/20 in the left eye. Biomicroscopy revealed ciliary injection and the presence of keratic precipitates. Examination of the fundus revealed mild vitreitis, retinal necrosis in the macula, pallor of the optic disc, diffuse vascular attenuation and diffuse pallor of the retina - compatible with infectious retinitis in the macula region concomitant to central retinal artery occlusion.

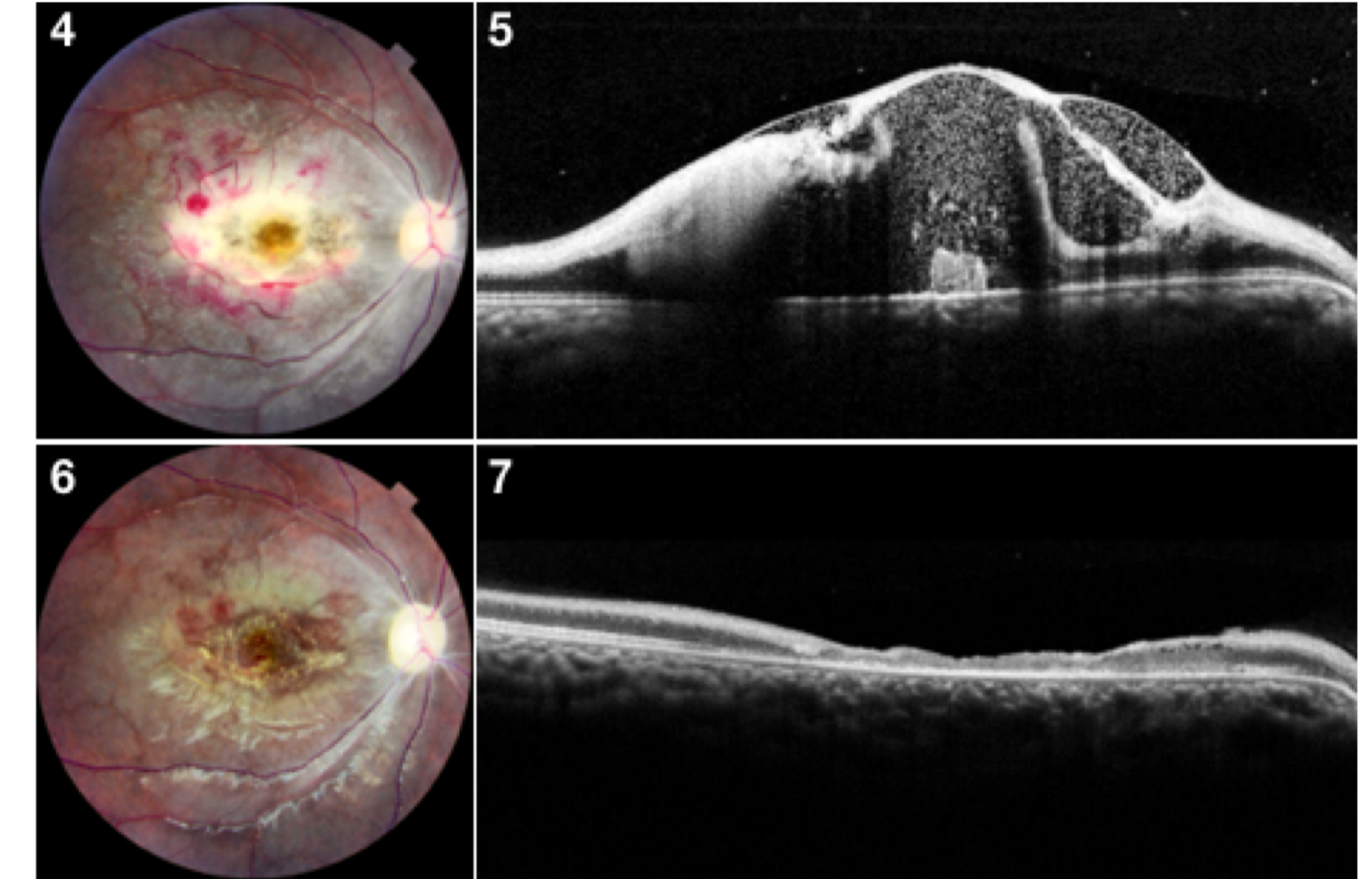
CT of the skull and orbits (Figures 1, 2 and 3) showed: protrusion of the right eyeball associated with an increase in superficial soft parts, thickening of the ipsilateral extraconal fat and apparent intraconal extension;

an extra axial collection, hypodense material inside the right maxillary sinus that extends through the corresponding ostiomeatal units; multiple dental roots inside both breasts; frontal, sphenoidal sinuses and ethmoidal cells presenting hypodense material inside, promoting veiling of the cavities, which extends through the corresponding drainage units; increased middle and inferior nasal turbinates bilaterally.

The patient was submitted to a septoplasty and sinusotomy with drainage of a large amount of purulent secretion. The culture of the material was positive for Ampicillin- and Penicillin-resistant *Staphylococcus aureus* and the anatomopathological study with diagnosis compatible with chronic and acute inflammatory process. Serologies for HIV 1 and 2, CMV and syphilis were negative.

The ophthalmological evaluation performed one week after the surgical procedure showed worsening of the visual acuity of the RE to no light perception (NPL). External examination showed improvement in proptosis with mild periorbital edema and preserved extrinsic eye movement without pain. Fundoscopy showed improvement in vitreitis and other findings were maintained (Figure 4). Optical coherence tomography (OCT) showed an increase in the thickness of the sensorineural retina due to lesions with a hyperreflective punctiform pattern and a relative increase of the nerve fiber layer with intra and pre-retinal collections (Figure 5).

Antibiotic therapy was maintained for 8 weeks with Cefepime, Oxacillin, Metronidazole and Fluconazole. At the end of treatment and medical discharge, visual acuity of the RE was NPL and at fundoscopy showed regression of macular lesions (Figure 6). On the OCT, an extensive area of atrophy of the sensorineural retina was noted, corresponding to the area of infection (Figure 7).



DISCUSSION

Ognibene et al. reported an 83.1% prevalence of orbital complications in 65 patients studied over a 10-year period. Mortimore and Wormald found 80% in a population studied in 5 years. OC can result in serious complications, including meningitis, cavernous sinus thrombosis, brain abscess and death. Serious eye and orbital complications can also occur, including formation of orbital scar tissue and loss of vision. In the case presented, the patient presented as complications empyema, infectious retinitis, OACR and low visual acuity.

The four common factors involved in visual loss mechanisms are increased intra-orbital pressure, extent of infection/inflammation in the main anatomical structures, and vascular inflammation leading to vasculitis and thrombosis.

Retinal artery occlusion usually results from compression due to increased orbital pressure. Despite early treatment with surgery and antibiotic therapy in this case, the sequel couldn't be avoided.

Bibliography

1. Madalena C, Costa M, Oliva T, Guedes M, Monteiro T. Celulite da região orbitária. *Saúde Infantil* 1998; 20:33-41.
2. Krohel GB, Krauss HR, Winnick J. Orbital abscess. Presentation, diagnosis, therapy and sequelae. *Ophthalmology* 1982;89:492-8.
3. Ognibene RZ, Voegels RL, Bensodon RL, Butugan O. Complications of sinusitis. *Am J Rhino* 2004;8:175-9.
4. Mortimore SG, Wormald PI. The Groot Schuur hospital classification of the orbital complications of sinusitis. *Laryngol Otol* 1997;3:719-23.