

Orbital Cellulitis of Suspected Odontogenic Origin: A Life-Threatening Emergency Requiring Urgent Interdisciplinary Management

Jure Valentinčič¹, Ana Srejić¹, Martin Možina¹, Alenka Lavrič Groznik^{1,2}, Gregor Hawlina^{1,2}, Ana Fakin^{1,2}

¹Eye Clinic, University Clinical Center Ljubljana

²Faculty of Medicine, University of Ljubljana

AIM: Orbital abscess is a life-threatening emergency due to the possibility of intracranial spread causing cavernous sinus thrombosis, meningitis or brain abscess; as well as primary or secondary sepsis causing organ failure. Our aim is to present a case of orbital cellulitis with a suspected odontogenic origin, highlighting the dental area as a cause of direct or indirect bacterial spread.

PATIENTS AND METHODS: CASE REPORT

Results: A 72-year-old male with diabetes mellitus type 2 and chronic obstructive pulmonary disease, paraplegic due to spondylodiscitis of septic origin four years prior, presented with rapidly progressive left-sided deterioration of vision, diplopia, periorbital edema and severe pain over two days. On presentation, he had visual acuity RE 0,8 and LE 0,6 Snellen decimal, severe chemosis, ptosis, restricted ocular motility, elevated intraocular pressure (30 mmHg) and choroidal detachment on LE; and multiple peripheral Roth spots on both eyes. Blood work-up showed elevated SR (63 mm/h) and CRP (30 mg/l). CT of the orbit showed a hypodense intraconal lesion under the superior rectus without typical signs of orbital cellulitis. Due to clinical signs of orbital cellulitis with orbital compartment syndrome emergency lateral canthotomy and cantholysis were performed and systemic antibiotic therapy was administered. Haematological origin was suspected due to bilateral Roth spots; however, haemocultures were negative, the chest X-ray was normal and the heart US did not show signs of endocarditis. Poor dental health was noted and on CT scan review periapical granulomas on the upper left side were described. Over the next two days, the clinical picture worsened with increased proptosis and chemosis and an increase of inflammatory markers (SR 62 mm/h and CRP 120 mg/l). Follow-up CT showed inflamed orbital fat and increased size of the hypodense lesion (from 25x10 to 30x13 mm), suggestive of an intraconal abscess. Transconjunctival orbitotomy was performed and US assisted abscess localisation and drainage after which the clinical picture dramatically improved. Stomatological exam identified a

periapical granuloma at tooth 27 with chronic apical periodontitis as a possible infectious source. Immediate extraction of tooth 27 was performed. Microbial cultures from the orbital abscess isolated *Campylobacter rectus*, commonly involved in chronic periodontitis with bone loss.

KEYWORDS: orbital abscess, odontogenic infection, *Campylobacter rectus*, periapical granuloma, emergency management, interdisciplinary treatment, periodontitis

CONCLUSION

This case highlights the dental area as a possible source of bacterial spread to the orbit. The proximity of maxillary molar roots to the orbital floor can facilitate rapid infection spread through thin maxillary bone. Patients with orbital cellulitis of unknown origin should undergo dental examination with periapical assessment to identify and eliminate odontogenic sources.

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