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A rare cause of ptosis in emergency medicine practice: acute sinusitis case report

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Abstract

Objective: Paranasal sinus infections are one of the most frequent causes of emergency service admissions. With increased incidence, complications are often local and classified according to the effecting side. Early identification of complication leads to reduce mortality and morbidity.

Case: A 22 year old male patient was admitted to our emergency department with ptosis on his right eyelid. Firstly he was admitted to the family doctor and received oral cephalosporin treatment for upper respiratory tract infection. Within three days, the ptosis was progressively occurred. No additional systemic sign was detected. The eyelid has slightly edema, not have redness, conjunctival hyperemia and loss of brow not observed. Eye movements were naturally, display pain in the outward view. For differential diagnosis central nervous system imaging was performed. Patient referred to otorhinolaryngology surgeon with prediagnosis of orbital cellulite and acute sinusitis. The patient was admitted to the otorhinolaryngology clinic for operation because of complicated sinusitis.

Conclusion: In the presence of acute sinusitis, infections may enter the orbital periosteum and spread to neighboring tissues. Computed tomography is a highly effective imaging modality for the evaluation of both paranasal infections and their complications. Patients with orbital complications must be hospitalized and immediate intravenous antibiotic therapy should be started.

Keywords: Paranasal sinus infection, orbital cellulite, ptosis

Introduction

Although paranasal sinus infections are a common group of diseases, complications are rarely occur due to appropriate antibiotic uses. However, it should not be forgotten that individuals who do not receive appropriate treatments may encounter with lethal consequences. Complications of sinusitis are usually classified according to the effecting side as local complications, orbital complications and intracranial complications.

Chandler and Moloney classifications are often used to classify orbital complications of acute sinusitis. According to Chandler's classification, orbital complications can be seen at 5 stages. These stages are classified as preseptal cellulitis (stage 1), orbital cellulitis (stage 2), subperiosteal abscess (stage 3), orbital abscess (stage 4) and cavernous sinus thrombosis (stage 5) according to the severity of the clinical presentation (1, 2).

Periorbital cellulite is often limited to orbital edema, eyelid edema, but deterioration of visual acuity is not expected. When the orbital cellulitis progresses, the orbital adipose tissue is affected by inflammation and resulted with proptosis, chemosis and visual acuity.

The subperiosteal abscess is characterized by inflammatory collection between periorbital tissue and bone tissue and is the most common orbital complication. The patient was often systemically affected and the eye moved outwardly on the eye examination. When abscess formation developed, the intraocular pressure increases and this can result in loss of perfusion of the optic nerve and retina, which is responsible for visual loss. Orbital abscess usually occurs after orbital cellulitis. Exophthalmia, chemosis, ophthalmoplegia are the expected findings (2, 3).

Eye findings often help in the diagnostic process of ptosis. Differential diagnosis in ptosis cases begins with history in order to understand the difference of congenital and acquired ptosis. The medical history and accompanying symptoms in the newly developed ptosis are significant in terms of diagnosis. Ptosis is often classified as neurogenic, myogenic, traumatic, mechanical and pseudoptosis. Myogenic causes such as myasthenia gravis are mainly considered in the case of ptosis in emergency medicine practice. Rapid recognition and treatment of infectious causes in these cases is vital to prevent long-term sequelae .We aimed to discuss the complications of sinusitis presented with ptosis by the help of literature.

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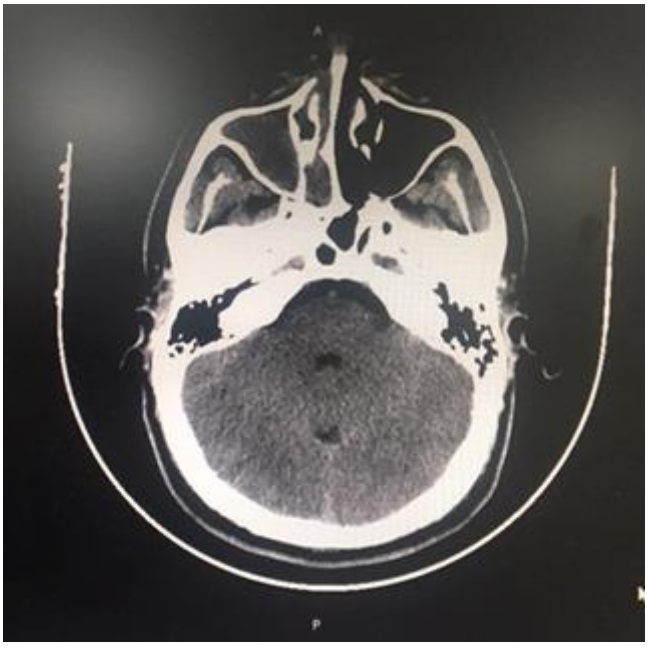
Case

A 22 years old male patient was admitted to our emergency department with ptosis on his right eyelid. There is no past medical history. He was admitted to the family doctor 3 days before the onset and received oral cephalosporin treatment for upper respiratory tract infection. Headache and fever have been observed but relieved after antibiotics. In three days ptosis progressively occurred and he admitted to emergency department for this reason. The overall situation was good, there is no loss of consciousness and orientation. Neck stiffness was negative and there was no motor or sense lateralization. Pathological reflex was not detected.

In physical examination oropharynx was hyperemic postnasal flow is present. No additional systemic sign was detected. There was > 2 mm ptosis in right eye. The eyelid is slightly edema, no redness. Conjunctival hyperemia and loss of brow not observed. Light reflex was positive and not anisocoria. Eye movements naturally, displayed pain in the outward view. Vital signs were stable, fever was 36, 5°. After initial examination blood tests were performed. Leukocyte counts were 13.900 /ml, sedimentation was 34% and CRP was 4.42 mg/l in laboratory tests.

No features were detected in routine biochemical examinations. For differential diagnosis central nervous system imaging was performed. Brain computed tomography was also detected in the loss of the right maxillary and ethmoid sinus ventilation (Figure 1). Diffusion-weighted and contrast enhanced cranial magnetic resonance imaging revealed no additional pathology in the head. Paranasal sinus tomography was also requested in addition and soft tissue densities in maxillary and ethmoid sinuses were detected at tomography. Patient referred to otorhinolaryngology surgeon with prediagnosis of orbital cellulite and acute sinusitis.

Figure 1: Brain computed tomography, detected in the loss of the right maxillary and ethmoid sinus ventilation



Purulent drainage and hyperemic mucosa were seen in the endoscopic examination. Ampicillin IV treatment was started during the emergency observation, and the ophthalmology and neurology physicians invited for consultation. No additional pathologies were detected. The patient was admitted to the otorhinolaryngology clinic for operation because of complicated sinusitis. Ampicillin sulbactam 4x1.5 and metronidazole 2x1 treatments were administered for post infectious diseases. After surgical drainage, the patient was discharged with appropriate antibiotics.

Conclusion

In the presence of acute sinusitis, infection may enter the orbital periosteum and spread to neighboring tissues. If the orbital cellulite develops, the eyelid swelling may occur, but it is not red or painful, eye becomes proptosis. The conjunctiva can be hyperemic and the eye movements are limited. The loss of vision is a sign of spread infection. Vision loss can be partial or complete and unfortunately sometimes permanent (3). Depending on the severity of the infection and orbital complications proptosis, bulbus motion restriction, chemosis, diplopia, pupillary reflex reduction, decreased visual acuity and even permanent visual loss can be seen. (4)

Radiological imaging methods are important both in verifying the diagnosis and in planning surgical treatment for paranasal sinuses or sinusitis complications (5). Computerized tomography is a highly effective imaging modality for the evaluation of both paranasal infections and their complications. In magnetic resonance imaging, cavernous sinus is important in assessing complications related to sinus infections such as thrombosis.

Every patient considered to have orbital complications should be asked for an ophthalmology consultation to assess the eye movements and their visual acuity. A problem in visual functioning is an urgent indication for surgery. Visual loss develops due to the increase of intraorbital pressure caused by cellulite, septic optic neuritis, embolic and thrombotic lesions in the vascular system that feed choroids, purulent inflammation of the optic nerve, or corneal ulceration. (6-9)

Patients with orbital complications should be hospitalized and immediate intravenous antibiotic therapy should be started. In medical treatment, ampicillin-sulbactam combination, cefuroxime, ceftriaxone is preferred intravenously (6, 10, and 11). We started ampicillin-sulbactam treatment intravenously in our patient. If orbital abscess is detected despite antibiotic treatment, urgent surgical drainage is advised in case of complaints such as limitation of eye movements, decrease in visual acuity, following eye consultation. (12).

Rhinosinusitis is one of the frequent reasons for referral to emergency services. Patients should informed for the complications that may develop and in recurrent admissions emergency physicians should be alert for related

complications. In particular, keeping in mind the orbital complications can prevent permanent visual loss and allows the patient to receive appropriate treatment.

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