Sudden Visual Loss in a Diabetic Patient

Saroj Gupta, Rajendra Kumar Gupta
Department of Ophthalmology, People’s College of Medical Sciences & Research Centre, Bhanpur, Bhopal-462037

(Received: December, 2016) (Accepted: January, 2017)

ABSTRACT
We report a case of sudden monocular visual loss with drooping of upper eyelid in a 65 year old diabetic patient. Examination revealed complete ophthalmoplegia with optic neuropathy and paranasal sinusitis. Early diagnosis and prompt management with radical debridement of sinuses along with antifungal therapy helped in preventing further complications.

KEY WORDS: mucormycosis; ophthalmoplegia; optic neuropathy; orbital apex syndrome; sinusitis; visual loss

INTRODUCTION:
Orbital involvement in sinusitis is a well-recognized entity. An infection from sinuses can easily spread to the orbit, either by direct extension through the bone or indirectly through valve less venous plexus surrounding the orbit and the sinuses[1]. Orbital apex syndrome (OAS) is a rare form of complication that classically presents with visual loss and ophthalmoplegia, but with minimal or no signs of orbital inflammation. The infection starts in the paranasal sinuses and extends into the orbital apex resulting in blindness. We present a case of acute fungal sinusitis that was complicated by monococular and irreversible visual loss with ophthalmoplegia in an elderly diabetic patient.

CASE REPORT:
A 65 year old man farmer by occupation, presented with periocular pain, swelling over left eye, loss of vision and drooping of upper eyelid since one week. He was on oral steroids for chronic dermatitis for past 3 years. He developed diabetes mellitus 4 month back and was put on oral antidiabetic drugs but he discontinued taking oral antidiabetic treatment 15 days prior to presentation.

Examination of left eye revealed periorbital swelling; complete Ptosis with III, IV, VI cranial nerve palsy (Figure 1). Perception of light was not present and pupil was dilated and fixed. Right eye vision was 20/20 and examination was within normal limits. Nasal examination showed blackish deposits on left side near middle meatus.

Laboratory investigation revealed leukocytosis (17000 cells/mcL) with high polymorph count (85%). His blood sugar was high. Fasting blood glucose was 168 mg/dL and post prandial blood glucose was 240 mg/dL. Therefore he was put on systemic antibiotics and insulin therapy. KOH preparation of nasal swab was sent for direct microscopy and nasal swab was inoculated on sabourads dextrose agar. CT Scan of orbit and Para nasal sinuses was also done.

KOH preparation of nasal swab showed aseptate fungal hyphae with right angled branching. (Figure 2) Culture on sabourads dextrose agar showed dense cottony fluffy growth. Lacto phenol cotton blue mount revealed broad, aseptate hyphae with rhizoids and sporangia suggestive of Rhizopus microsporus var roseus.
Discussion:
Isolated cranial nerve palsies are common in patients with diabetes mellitus, but multiple simultaneous cranial nerve palsy with visual loss is rare. The differential diagnosis includes diabetic polyneuropathy, cavernous sinus thrombosis, Rhino orbital mucormycosis and the Tolosa Hunt syndrome. Visual loss due to optic neuropathy and ophthalmoplegia involving III, IV, VI, and V1 are the hallmarks of an orbital apex syndrome (OAS). The cavernous sinus syndrome (CSS) may include the features of an OAS along with involvement of the maxillary branch of the trigeminal nerve (V2) and oculosympathetic fibers. Cavernous sinus lesions are also more commonly bilateral.

Orbital apex syndromes may result from a variety of inflammatory, infectious, neoplastic, and vascular conditions. A detailed history, laboratory investigations and imaging helps in narrowing the differential diagnosis.

Rhinobital mucormycosis is a rare but potentially aggressive and fatal fungal infection. It usually starts in the nasal or oral mucosa after inhalation of fungal spores, then it rapidly spreads to the paranasal sinuses, and enters the orbit via the angular vein, lacrimal and ethmoid vessels as well as by direct extension from sinuses.

Pathologically, mucormycosis is characterized by vascular invasion with fungal hyphae, infarction and necrosis of tissue. The predisposing factors for mucormycosis include poorly-controlled diabetes mellitus, alcoholism, prolonged corticosteroid treatment and immunosuppression. The diagnosis is confirmed by demonstrating tissue invasion and subsequent tissue reaction to the fungi, rather than just the presence of the organism. The current treatment strategy involves rapid diagnosis, treatment of underlying medical conditions, systemic antifungal therapy and surgical debridement of sinuses when needed.

Conclusion:
In orbital apex syndrome prognosis is good with control of predisposing factors, aggressive treatment by radical debridement of sinuses and antifungal therapy. Early diagnosis and aggressive management is important to prevent blindness and intracranial complications.

References: