Acute Orbital Hemorrhage as a Presentation of a Lytic Bony Lesion

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ABSTRACT

A 61-year-old Chinese man presented to the emergency department with a 1-day history of painful swelling of the right eyelid with loss of vision. He had been treated earlier for an isolated pathological fracture of the T7 vertebra from plasmacytoma. Computed tomography was suggestive of superior orbital hematoma with bony erosion of the inner and outer tables of an isolated frontal cell, and urgent drainage of the hematoma resulted in relief of the pain and improvement of the vision. A formal orbitotomy was performed to evacuate the hematoma, followed by combined endoscopic sinus surgery and external anterior frontal table trephine to connect the isolated cell to the frontal sinus. The histology did not show evidence of myeloma, and the orbital hematoma was probably a result of an acute hemorrhage into the mucocoele of an isolated cell in the frontal bone. However, in patients with a history of multiple myeloma, it is important to consider lytic bony involvement as the cause of an orbital hemorrhage.

KEYWORDS: Multiple myeloma, hematoma, orbit

Orbital involvement in multiple myeloma (MM) is rare. The usual presentation is a mass effect with subacute proptosis, with or without pain, in a patient over 50 years of age. Patients may also present with ptosis, conjunctival congestion, tearing, blurred vision, and diplopia.¹ MM spread to the orbit could be mistaken for angioedema-like eyelid swelling² or orbital cellulites.³

We report a patient with known history of MM who presented with vision-threatening orbital hemorrhage.

CASE REPORT

A 61-year-old Chinese man presented to the emergency department with complaints of rapidly increasing right upper-eyelid swelling with headache and blurred vision

of 1-day duration. The patient was known to have ischemic heart disease for which he was on ticlopidine and was diagnosed with MM by bone marrow aspiration a month earlier following a pathological fracture of the T7 vertebra. After a complete systemic workup, which was negative for lesions elsewhere, the patient was managed with dexamethasone and thalidomide before a scheduled bone marrow transplantation. The patient was admitted with a suspicion of right acute orbital cellulitis and was started on intravenous antibiotics before referral to the ophthalmology team.

On examination, there was no perception of light in the right eye with +4 relative afferent pupillary defect, with a tense right upper-eyelid swelling and severe limitation of ocular motility (Fig. 1). Fundus examination showed a pink and perfused optic nerve. The contralateral eye was normal. Review of computed

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Figure 1 Right upper-lid swelling without erythema.

tomography scan showed right superolateral homogeneous orbital mass with fluid level, which was suspicious of hematoma. There was an isolated cell in the frontal bone, lateral to and not in communication with the frontal sinus. The floor and posterior wall of the cell were eroded, with communication to the orbit and to the anterior cranial fossa (Fig. 2). Urgent 16-gauge percutaneous needle drainage of the superior orbit was performed with 8 mL of blood aspirated. Within minutes, the headache resolved and his near visual acuity and relative afferent papillary defect (RAPD) improved to 6/120 and grade 2, respectively, with restoration of ocular motility. Over the next 24 hours, there was reaccumulation of blood requiring repeat needle drainage. The patient subsequently underwent a formal anterior orbitotomy with evacuation of the blood and curettage of the "isolated cell" with no further bleeding episodes. Three weeks later, the vision in the right eye had improved to 6/9 with trace RAPD and a residual superonasal visual field defect. Fundoscopy showed right inferotemporal optic disc hemorrhage. The patient later underwent a combined endoscopic sinus surgery and external anterior frontal sinus table trephine to connect the isolated cell to

the frontal sinus. Frontal bone specimen from the site was negative for evidence of myeloma.

DISCUSSION

MM is a systemic disease characterized by plasma cell infiltration of bone marrow, multiple erosive bony lesions, and production of monoclonal proteins. It could present as an orbital mass³ or as solitary cell tumors of the bone or soft tissues without evidence of systemic infiltration.⁴ Acute intralesional orbital bleeding has been described with various lesions including aneurysmal bone cyst and giant cell granuloma.⁵ The usual presentation of plasmacytoma of the orbit is of a gradually expanding mass lesion. Rappaport et al⁶ described a case of orbital plasmacytoma with subacute intralesional hematoma, in which the orbital signs developed insidiously over 7 weeks, and the orbital hematoma was attributed either to intralesional necrosis or the anticoagulant the patient was on for his heart condition. Our patient had an acute presentation with symptoms of severe pain and visual loss. The histology did not show evidence of myeloma, and the orbital hematoma was probably a result of an acute hemorrhage into the mucocoele of an isolated cell in the frontal bone. However, in patients with a history of MM, it is important to consider lytic bony involvement as the cause of an orbital hemorrhage.

Although orbital plasmacytoma is rare, it should be included in the differential diagnosis of a spontaneous orbital bleeding especially in patients with a history of MM. Urgent management of the orbital compartment

Figure 2 Computed tomography of the patient showing (A) right isolated frontal cell with osteolytic lesion opening to the orbit, (B) osteolytic opening to the anterior cranial fossa, (C) fluid level in the homogenous lesion of the right superolateral orbit.

syndrome could save the patient's vision, even with no light perception with grade + 4 RAPD presentation.

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