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Case report

Spontaneous retrobulbar hemorrhage in a patient with breast cancer: A case report

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Abstract

***Purpose*:** We present spontaneous retrobulbar hemorrhage in a 52-year-old woman with history of breast cancer and tamoxifen intake which was first thought to be an orbital metastasis.

***Case report*:** A 52-year-old woman with history of breast cancer and tamoxifen intake was referred due to severe proptosis and visual loss. Orbital imaging showed an intra-conal mass. After exploration, multiple fragments of dark brown mass in the retrobulbar area were excised. Microscopic diagnosis was blood clot. All of clinical signs and symptoms were improved 1 week after operation.

***Conclusion*:** Spontaneous retrobulbar hemorrhage is a rare condition that may have unknown etiologies, and its symptoms may mimic orbital metastasis. Since both breast cancer and tamoxifen intake can cause coagulation disorders, they might be possible causes for retrobulbar hemorrhage in this case.

Keywords: Spontaneous retrobulbar hemorrhage; Breast cancer; Tamoxifen

Introduction

Retrobulbar hemorrhage may occur spontaneously or as a subsequent of a distinct etiology. Some etiologies known until now include orbital vascular anomalies, subsequent trauma, surgery around the orbit, and systemic disease such as coagulopathy, toxic conditions, and uncontrolled hypertension.[1] It has been reported secondary to orbital tumor and pseudotumor. Spontaneous retrobulbar hemorrhage is a rare condition.[1] Symptoms may occur gradually or suddenly. Herein, we present a case of spontaneous retrobulbar hemorrhage that developed symptoms mimicking orbital mass and did not have known etiology except history of breast cancer and tamoxifen intake.

Case report

A 52-year-old woman with history of breast cancer was referred to Oculoplastic Service, Farabi Eye Hospital, Tehran, Iran for evaluating proptosis. A compressive orbital mass was detected in her MRI and was taken to the neurologic department. She had complained of acute ocular pain and progressive visual loss in her left eye from 2 weeks earlier. She had been using tamoxifen since 5 years earlier after mastectomy due to her right breast cancer. She had no history of other systemic disease or trauma. On examination, left eye visual acuity was finger count at 1 m, and she had a left afferent pupillary defect. There was a severe inferolateral proptosis (28 mm in Hertel exophthalmometry), secondary ptosis, and limitation of ocular motility in almost all directions, especially in elevation and adduction (Fig. 1). There was not any evidence of concurrent periorbital hematoma or subconjunctival hemorrhage. Her left eye intraocular pressure was 23 mm Hg. At fundus

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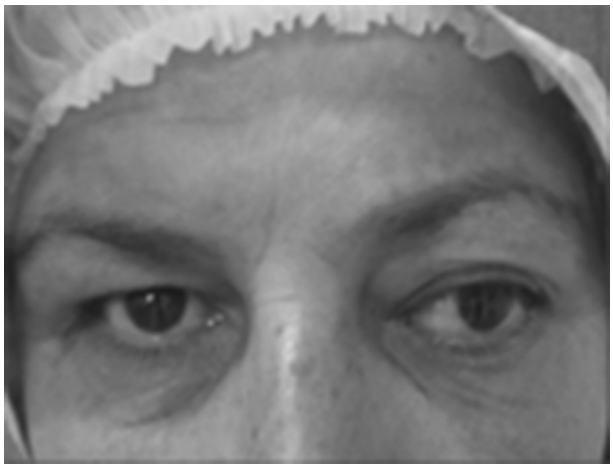

Fig. 1. Photograph showing proptosis and lateral displacement of globe.

examination, optic disc margin was blurred. Routine lab tests and hematologic tests including bleeding time, clotting time, and platelet count were within normal limits without evidence of bleeding tendency. Her systemic blood pressure was 138/98 mmHg. The patient was not on Aspirin or any type of anticoagulation.

Orbital CT scan showed an elliptical well-defined mass within the left intraconal space. It was a high-density and homogenous consistency mass that compressed and displaced the optic nerve to the supranasal side (Fig. 2). Orbital T1 weighted MRI demonstrated an intraconal mass extending to the orbital apex that had a hypointense layer around the hyperintense mass without enhancement (Fig. 3a, c). At the T2 weighted MR scan, the intraconal mass was isointense but the superior part of the mass was hyperintense, and the other part that was near the orbital apex was hypointense (Fig. 3b). The patient underwent supralateral lid crease orbitotomy. While

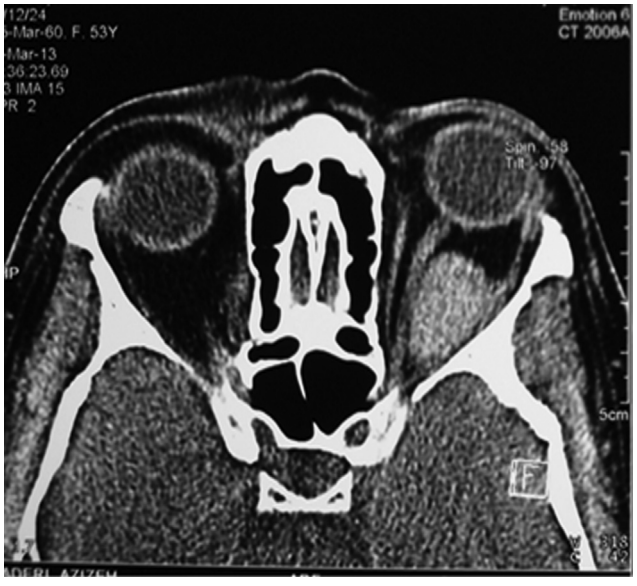

Fig. 2. Orbital CT scan, axial view showing a well-defined intraconal mass in the left orbit that pushed the optic nerve medially.

opening the mass, at first a yellowish liquid was depleted, and then gelatinous, semiclotted blood was removed. Finally, a solid mass that was similar to a hard blood clot remained (Fig. 4). Pathologic report confirmed the diagnosis of blood clot. Visual acuity dramatically improved to 20/30 one week after operation, and other clinical symptoms and signs improved completely.

Discussion

Spontaneous retrobulbar hemorrhage without known etiology is rare.[1] In many case reports differentiation between retrobulbar hematoma and tumor metastasis according to clinical symptoms has been impossible. Metastatic breast cancer is the leading cause of orbital metastasis and is responsible for 48–53% of orbital metastatic tumors.[2]

Imaging such as CT scan and MRI plays an important role to differentiate between metastatic breast cancer and retrobulbar hematoma. There are multiple characteristic features to diagnose metastatic breast cancer in MRI and CT scan, including diffuse intraconal lesions, intra-muscle masses, and diffuse enhancement of retro-bulbar fat with abnormal heterogenous hypointensity and fibrotic infiltration and bone destruction contagious to the mass.[3] But in our case, axial T1 weighted MRI obtained 15 days after beginning of symptoms demonstrated a halo of low signal mass surrounding a high signal mass. T2 weighted image revealed layering pattern of signal. These findings express a hematoma that has started to undergo physical changes and biochemical hemoglobin lysis. On the other hand, a deeper part of the hematoma had a solid part that was hypointense both at T1 and T2 and presented like a foreign body at MRI (Hypointense at T1 and T2). Even though it was predictable that the mass could be a hematoma considering the acute onset and multilayer nature of the mass in MRI, we did not offer a needle aspiration before surgery for two reasons: Firstly, the deeper part of the mass seemed to be dense and solid according to MRI, so we could not aspirate it easily. Secondly, the most important differential diagnosis in this patient was orbital metastasis, and needle aspiration did not seem to be a good plan for its management.

Several cases of retrobulbar hemorrhage without definite etiology similar to our case has been reported.[1,2,4] Matsuura et al.[3] reported a patient with orbital discomfort and exophthalmos without concomitant trauma, which firstly has been mistaken to be an orbital tumor. Orbital CT scan revealed a round mass without enhancement, after surgical removal and diagnosis was blood cyst.[3] Tsatsami et al.[5] reported a 75-year-old man who presented with sudden onset visual loss, orbital pain, and exophthalmos. Histologic finding demonstrated pseudotumor with hemorrhagic changes.

Patients with history of breast cancer are at higher risk for coagulation disorders compared with the healthy population. Tumor cell properties change balance between coagulation and fibrinolysis mechanism.[6] Furthermore, hypercoagulability state could be induced by different medical interventions such as hormonal agents in this group of patients. Breast cancer is a