**CLINICAL INVESTIGATION**

**Metastatic Carcinoma of the Breast: A Case with the Unusual Presentation of Unilateral Periorbital Edema**

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**Abstract**

**Background:** Metastasis of mammary cancer involving the orbit is common, and it typically presents with enophthalmos and restrictions of ocular motility. We report a case of mammary cancer with the unusual presentation of unilateral periorbital edema only. The possible mechanisms of unilateral periorbital swelling are discussed.

**Case:** Metastasis of breast cancer involving unilateral eyelid edema was diagnosed in a 66-year-old woman. A biopsy was performed to confirm the etiology after vague neuroimaging findings. The diagnosis was based on the histopathologic features of carcinomatous cells in the excised specimen.

**Observations:** Insidious, progressive unilateral upper and lower eyelid swelling of the right eye disappeared after one cycle of palliative chemotherapy. Neither restriction nor proptosis developed in the whole course.

**Conclusions:** Possible metastasis should be considered as a possible etiology of unilateral eyelid edema, even without a palpable mass or limitation of ocular motility. A biopsy should be performed in cases of unexplained eyelid edema. **Jpn J Ophthalmol** 2008;52:305–307 © Japanese Ophthalmological Society 2008

**Key Words:** breast cancer, eyelid edema, mammary metastasis, periorbital edema, unilateral

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**Introduction**

Unilateral periorbital edema is usually attributed to localized infection, inflammation, lymphatic malformation, lymphoproliferative disease, or circulation defects. Only rarely is it the only manifestation of mammary cancer metastasis, although orbital metastasis of the breast cancer is common.¹²

We report a case of mammary cancer with the unusual presentation of unilateral periorbital edema.

**Case Report**

A 66-year-old woman presented with a 2-month history of progressive unilateral upper and lower eyelid swelling without erythema or induration in January 2007 (Fig. 1). The patient had no recent fever, chills, or body weight loss. Medical history revealed a right-sided modified radical mastectomy with axillary lymph node dissection for invasive breast cancer, T3N2M0, stage IIIA in July 2004. Adjuvant radiotherapy and chemotherapy were given with six cycles of cyclophosphamide, epirubicin, and 5-fluorouracil, followed by hormone therapy with tamoxifen. Unilateral peri-
Orbital swelling of the right eye developed about 3 years later. On physical examination, visual acuity was 20/60 OD and 20/40 OS, and intraocular pressure was 14 mmHg in both eyes. The right eye displayed upper and lower eyelid swelling without local inflammation or any palpable mass. Both external ocular surfaces and intraocular structures were unremarkable and without disc edema. Mild cataract OU was consistent with the visual acuity. There was no proptosis, extraocular motility disorder, periorbital tenderness, or palpable mass or lymph node present.

Laboratory tests revealed normal renal, cardiac, and hepatic functions. Magnetic resonance imaging (MRI) of the orbit demonstrated a right-sided unilateral diffuse infiltrative soft-tissue enhancement surrounding the orbit, the frontal sinus, and the dura mater. Orbital swelling of the right eye was consistent with the visual acuity. There was no proptosis, extraocular motility disorder, periorbital tenderness, or palpable mass or lymph node present.

Computed tomography (CT) of the orbital scan revealed no signs of bony destruction, although a whole body bone scan revealed possible multiple bony metastases in the ribs and skull. Hepatic and bony metastases were impressed by radioimaging in February 2007.

Surgical biopsy of the soft tissue below the orbital roof was performed for confirmation of the etiology of unilateral periorbital edema. Histological investigations of the specimen showed a fibroadipose tissue composed of infiltrative cell nests. These suspicious cells had features of hyperchromatic nuclei with a high nucleus/cytoplasm ratio and high mitotic rates. Immunohistochemical stains proved positive for cytokeratin (Fig. 3). All of these results confirmed the diagnosis of metastasis with an epithelial origin. Another specimen of the edematous eyelid showed chronic inflammation without tumor metastasis. Palliative chemotherapy with trastuzumab, docetaxel, tegafur, and cyclophosphamide was administered, and the eyelid edema disappeared after one cycle of chemotherapy. At the same time, a repeat MRI showed that the previous infiltrating soft tissue in the orbit and tumor had disappeared, and there was shrinkage in the frontal sinus. At the moment, the patient is relatively well with good performance after three cycles of chemotherapy.

Discussion

Bilateral periorbital edema is common in clinical practice and is almost always associated with cardiac failure, nephropathy, angioedema, endocrine disorders, connective tissue diseases, systemic infection, lymphoproliferative disease, or metastases.

However, unilateral periorbital edema is usually attributed to a localized etiology, such as orbital contact dermatitis, cellulitis, or inflammatory pseudotumor. It is uncommon for it to be a manifestation of systemic disease, such as periorbital lymphatic malformation, lymphoproliferative disease, Kaposi’s sarcoma, Melkerson-Rosenthal syndrome, or Pott’s puffy tumor. It is only rarely a presentation of metastatic carcinoma of the breast.