

## Erosive Conjunctivitis and Punctal Stenosis Secondary to Docetaxel (Taxotere)

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**Purpose.** To report a case of erosive conjunctivitis and punctal stenosis occurring secondarily in a patient who underwent administration of docetaxel. **Methods.** Observational case report: a 58-year-old female with metastatic breast cancer developed erosive conjunctivitis and punctal stenosis after undergoing administration of systemic docetaxel. **Results.** Resolution of the erosive conjunctivitis occurred after discontinuation of docetaxel. The punctal stenosis persisted. **Conclusion.** Patients receiving treatment with docetaxel require frequent monitoring to discover potentially irreversible ocular damage.

**Key Words:** Docetaxel—Conjunctivitis—Punctal stenosis.

We report a case of erosive conjunctivitis and punctal stenosis occurring secondarily in a patient who underwent chemotherapy with docetaxel (Taxotere; Aventis, Bridgewater, NJ), a commonly prescribed medication used to treat metastatic breast cancer. Breast cancer is the most common malignant neoplasm in European and North American women. It is estimated that 1 of 9 women will be diagnosed with breast cancer. There is a concern that these side effects will not be recognized and possibly lead to irreversible damage in many women.

### CASE REPORT

A 58-year-old white female presented with a 6-week history of redness and tearing, OU. One week previously she had completed her seventh week of chemotherapy for metastatic breast cancer. Her medications included weekly intravenous administration of docetaxel and trastuzumab (Herceptin, Genentech, San Francisco, CA). One week prior to presentation these drugs were discontinued because of a severe episode of fluid retention with pulmonary edema. Nose and mouth sores had also developed along with the onset of her ocular symptoms. Topical neosporin, fluoromethalone, and erythromycin were prescribed but the patient showed no improvement. She wears extended soft contact lenses, and an examination showed her best-corrected vision was 20/30, OU, with normal pupils and motility; intraocular pressures were 15 OD and 13 OS, and a dilated fundus examination was normal, OU.

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A slitlamp examination revealed mild madarosis and complete closure of all four puncta. Dilation of the puncta was not possible. The conjunctiva of both eyes showed focal areas of injection, with overlying denuded conjunctival epithelium that stained brightly with fluorescein (Fig. 1). Both lenses showed mild anterior subcapsular polychromatic changes (Fig. 2). There was no history of myotonic dystrophy. The patient was treated with erythromycin ointment, with near complete resolution of her symptoms, and was not restarted on a chemotherapeutic regimen.

Docetaxel is an antineoplastic agent in the taxoid class, currently being used to treat metastatic breast cancer, as well as other malignancies. It is a semisynthetic compound derived from an extract of the needles of the European yew (*Taxus baccata*). Docetaxel acts as a mitotic spindle poison, thereby arresting cell development during the M-phase and preventing cell division. Common side effects include myelosuppression, fluid retention, hypersensitivity reactions, mucositis, alopecia, myalgias, fatigue, skin and nail toxicity, and peripheral neuropathy.<sup>1</sup>

Docetaxel is typically administered every 3 weeks by intravenous infusion. Recently, several studies have shown equal efficacy but a greater safety profile when docetaxel is given every week with a lower dose. The oncology literature describes excessive tearing and conjunctivitis in some patients treated with docetaxel.<sup>2</sup> With the weekly dosing regimens, the incidence of conjunctivitis has approached 50% in some studies.<sup>3</sup> Formal ophthalmologic examination of several of these patients showed findings that were normal. Severe epiphora has been reported in 77% of patients treated with weekly docetaxel, with a mean onset of 7 weeks.<sup>4</sup> This contrasted to the 11% of patients who received docetaxel treatment once every 3 weeks and reported only transient epiphora. Esmaili et al.<sup>5</sup> first described severe canaliculitis and punctal stenosis in three patients treated with weekly docetaxel. A subsequent case series from the same authors described the surgical treatment and outcome in 10 patients with epiphora from weekly docetaxel treatment.<sup>6</sup> Seven patients (12 eyes) underwent bicanalicular silicone intubation, and three patients (5 eyes) required dacryocystorhinostomy (DCR) (canaliculo-DCR) with placement of a silicone tube. In two patients (3 eyes), the degree of canaliculitis was severe enough to require conjunctivo-DCR with placement of a Pyrex glass tube (Jones tube). The authors recommend referring these patients early to an ophthalmologist as soon as symptoms develop to avoid complete fibrosis of the canalicular system, which requires more invasive surgery.

The mechanism underlying this patient's condition is unknown. Cells with rapid turnover such as those lining the mucous membranes are more susceptible to the cytotoxic effects of chemotherapy. Possibly, the eroded surfaces of the canalicular system are in



FIG. 1. Slitlamp view of the left temporal bulbar conjunctiva showing vascular tortuosity with overlying focal area (milky white) of conjunctival epithelial loss. Fluorescein staining (not shown) of this area was present.

opposition and subsequently fibrose together. The most likely mechanism is secretion of the drug in the tear film, with direct toxic contact of the ocular surface and canalicular system. Docetaxel has been detected in tear samples immediately following intravenous infusion; however, formal pharmacokinetic studies have not been performed.<sup>7</sup> It is unclear if the polychromatic lenticular changes are the result of docetaxel therapy; however, the subcapsular location of the changes may indicate recent formation. A prospective study to evaluate the effect of dosing regimen with respect to ocular toxicity is underway at the University of Texas, M.D. Anderson Cancer Center, Houston, Texas.

Docetaxel is a commonly prescribed chemotherapeutic agent used for metastatic breast cancer. We describe a case of erosive conjunctivitis and punctal stenosis secondary to docetaxel administration. Ophthalmologists and oncologists should be aware of this adverse side effect because early detection may initiate interventions in order to avoid surgery of the canalicular system.

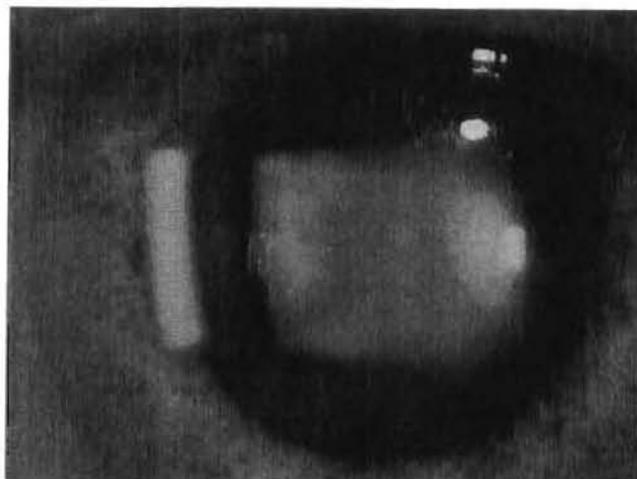


FIG. 2. Slitlamp view of the right lens showing anterior subcapsular polychromatic opacities.

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## ERRATUM

In the article by Walsh et al., Can UV Radiation-Blocking Soft Contact Lenses Attenuate UV Radiation to Safe Levels During Summer Months in the Southern United States? (*CLAO J* 2003; 29[1S]:S174-S179), the symbols in figures 4-7 representing two products, "+" for Surevue and "x" for Biomedics UV 55, were reversed in the legends. The legend symbols in figures 4-7 should read "+, Surevue; x, Biomedics UV 55," (not "x, Surevue; +, Biomedics UV 55").