Clinical and Histopathologic Correlation of an Eruption Secondary to Taxotere

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ABSTRACT

Eruptions in cancer patients may signal life-threatening infections, cutaneous metastases or reactions to chemotherapeutic agents. Distinguishing between these processes is essential to correctly treat the patient. The authors present a patient with a diffuse eruption that was initially believed to be infectious in etiology. Temporal correlation with administration of Taxotere (docetaxel, sanofi aventis, Bridgewater, NJ) as well as histologic and microbiologic data established the eruption as a reaction to this medication. It is important to recognize this eruption (as well as others similar to it). The authors present clinical and histopathologic information to help clinicians identify reactions to this type of chemotherapy.

INTRODUCTION

The occurrence of eruptions from chemotherapy including Taxotere is well documented.[1] These eruptions span the spectrum from urticarial reactions to toxic eruptions to erythema multiforme major.[2] One report of cutaneous reactions to docetaxol lists a cutaneous reaction rate of 70 percent with erythematous patches and violaceous plaques among the most common.[3] According to the package insert, localized erythema of the extremities with edema is noted with administration of the drug. Most of these eruptions are promptly recognized by dermatologists familiar with complications from common chemotherapeutic agents. However, some of the eruptions may be difficult to recognize as drug-related because they mimic infectious etiologies. The authors report the case of one such eruption and discuss the histology, progression and treatment of this eruption.

CASE REPORT

A 62-year-old woman presented for evaluation of a rash on her scalp. Her past medical history was notable for metastatic uterine leiomyosarcoma for which she was undergoing chemotherapy with Taxotere. She stated that this eruption had occurred several times previously with each instance being preceded by an infusion of the same chemotherapy. On prior occasions it resolved following the use of intravenous steroids.

Examination revealed a middle-aged woman with alopecia in no apparent distress. She was afebrile. The skin of her scalp contained scattered follicular papules and pustules (Figure 1). At the time of presentation, she had a normal white blood count. The differential diagnosis for the eruption included both bacterial and fungal folliculitis or a follicular based drug eruption. Given her prior eruptions with similar morphology and her clinical appearance, treatment was initiated with cephalexin 500 mg tid, topical sodium sulfacetamide and ketoconazole shampoo.

FIGURE 1. Scattered follicular based pustules are noted throughout the scalp. There is no surrounding erythema.

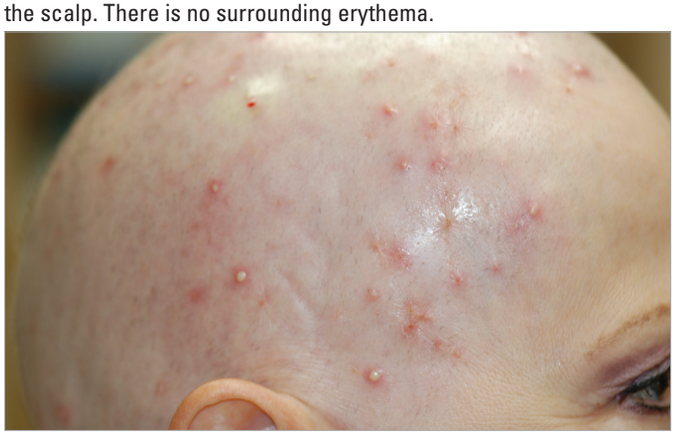
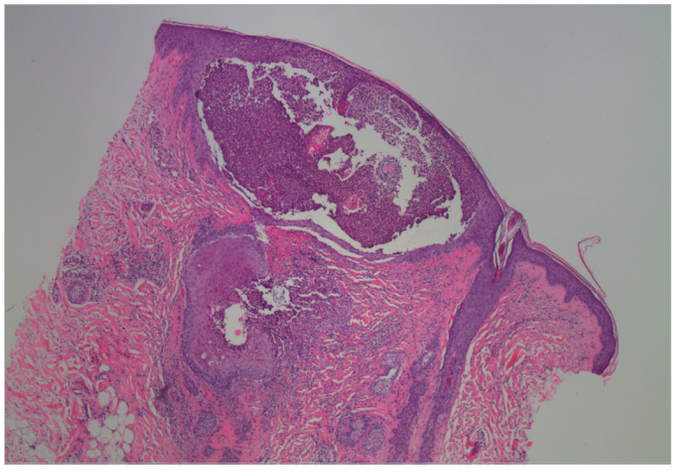
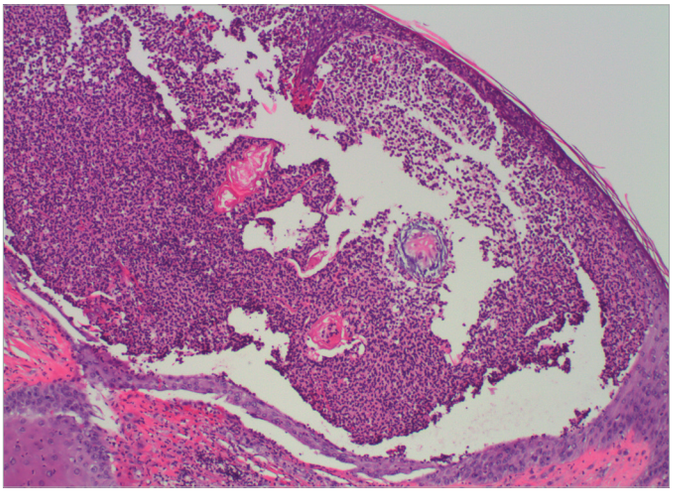


FIGURE 2. 40x magnification of the punch biopsy specimen reveals a follicular based pustule with a predominantly neutrophilic infiltrate.



A 3-mm punch biopsy was performed on her right temporal scalp. Histopathology was notable for a neutrophilic folliculitis with follicular disruption (Figure 2). Higher magnification reveals that the epidermal layer has been largely replaced by

FIGURE 3. 100x magnification reveals that the infiltrate has largely replaced the epidermis.



neutrophils (Figure 3). Stains for bacteria and fungal organisms were negative. A bacterial culture obtained from one of the pustules did not grow organisms. The diagnosis of a follicular based drug eruption was made based on these results.

Following the results of the culture and biopsy, the oral antibiotics were discontinued and systemic steroids were initiated using dexamethasone (Merck & Co., Inc., Whitehouse Station, NJ). Resolution of the eruption occurred over approximately two days.

DISCUSSION

Dermatologists are frequently called upon to evaluate patients who are critically ill. Many of these consultations involve patients who have received chemotherapy for malignancies and a great deal of those patients will also be immunodeficient and at risk for infections. Unlike the majority of infections with which dermatologists deal, those in patients receiving chemotherapy may have atypical etiologies such as opportunistic fungal infections, unusual viral infections or bacterial infections that might otherwise be nothing more than a nuisance. Separating infections from chemotherapy reactions is not always simple—both can be erythematous and warm. Pustular, vesicular and bullous reactions may arise from bacterial, fungal or viral etiologies and they may also be prompted by reactions to chemotherapy. Frequently, pustular reactions are bacterial in nature and prompt treatment can prevent systemic involvement in predisposed patients.

Patients with cancer may also present with pustular lesions for other reasons. These may include Sweet's syndrome and neutrophilic eccrine hidradenitis. Sweet's syndrome patients have eruptions that are usually different from pustular drug eruptions or infections but distinguishing among these may be difficult. Neutrophilic eccrine hidradenitis is a rare eruption that has a characteristic distribution and histology. Biopsy will frequently help to distinguish between this eruption and infections.

In the patient reported in this article, the pustular reaction was initially presumed to be infectious and treated as such. The evaluation of the lesions by culture and histopathology revealed that they were sterile. The temporal correlation of the reaction with infusions of taxotere support the fact that the reaction was drug related.

CONCLUSION

Taxotere is used for a variety of cancers including breast, lung and ovarian. It may be used in combination with a variety of other chemotherapeutic agents some of which can produce neutropenia. In neutropenic patients, eruptions such as the one seen in this patient can initiate a sequence of events culminating in the use of multiple antibiotics and/or antifungal agents. However, not all that is pustular is infectious. A variety of chemotherapeutic agents may produce pustular eruptions. A skin biopsy utilizing stains for fungal and bacterial organisms as well as bacterial, fungal and atypical mycobacterial cultures will help to identify infectious etiologies in a patient undergoing chemotherapy.

DISCLOSURES

The authors have no relevant conflicts of interest to disclose.

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