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Acute Felon as a Complication of Systemic Paclitaxel Therapy: Case Report and Review of the Literature

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Abstract Breast cancer now affects 1 in 8 American women and the taxane agent paclitaxel (Taxol® Bristol-Myers Squibb) is a major tool in the treatment of many such patients. Hand surgeons are therefore likely to encounter upper extremity complications related to the use of taxane therapy. We present an unusual case of a felon developing in a breast cancer patient on paclitaxel therapy with no antecedent history of trauma. Whereas onycholysis and subungual hemorrhage are reported complications of taxane therapy (Fig. 1), an acute felon with or without associated paronychia is an unusual and more aggressive manifestation of this drug-related nail dystrophy.

Keywords Breast cancer · Felon · Onycholysis · Paclitaxel · Paronychia · Taxane

Introduction

Breast cancer currently affects 1 in 8 American women, making it an extremely common disease. The taxanes, paclitaxel (Taxol®, Bristol-Meyers Squibb) and docetaxel (Taxotere®, Aventis Pharmaceuticals) are proven chemotherapeutic agents in the treatment of solid tumors including breast, ovarian, and lung carcinoma. These agents have side effects that occasionally require the attention of a hand surgeon. In this report, we discuss an unusual case of a felon developing in a woman on long-term paclitaxel therapy with no antecedent history of trauma. A review of current literature addressing the upper-extremity-related side effects of taxanes then follows revealing that whereas nail dystrophy is common in such patients, an acute felon is an unusual complication of taxane therapy (Fig. 1).

Women with advanced breast cancer unresponsive to standard chemotherapy are often treated with intravenous infusions of paclitaxel at a dose of 75–100 mg/m^2, given weekly. Common side effects of such treatment include myelosuppression, alopecia, and stomatitis [8]. Peripheral neuropathy and cutaneous toxicity largely limited to the upper extremity are a unique set of side effects occasionally associated with such therapy.

Case Report

A 60-year-old woman treated with 18 weeks of paclitaxel and 5-FU for breast carcinoma with metastasis to the liver and skeleton presented with the acute onset of pain, swelling, and erythema of the left long finger distal to the distal interphalangeal (DIP) joint (Fig. 2). Two weeks before she presented to the hand surgery service, she had developed nail dystrophy of all 20 digits of the hands and feet characterized by onycholysis, nail pain, and subungual hemorrhage. In addition, all 10 fingernails developed draining subungual abscesses.

The patient presented to the hand surgery service with acute pain, swelling, drainage, and erythema of the left long finger, which involved the finger pulp. The finger pulp was tense and painful and varied from pale to pink with the patient's pulse (Fig. 3). The diagnosis acute felon with

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Figure 1 A patient with subungual hemorrhage, hemosiderin staining, and mild onycholysis. No acute paronychia is present.

associated paronychia was made. Treatment involved an ulnar midlateral incision along the distal phalanx. Exploration revealed frank purulence with communication between the subungual abscess and the finger pulp, a space usually involved in an isolated felon [1]. The nail plate was removed to allow complete drainage. Whereas all 10 fingernails had evidence of spontaneous drainage and onycholysis, the lack of swelling or significant erythema in any of the other digits suggested that nail plate removal and exploration in those digits would not be indicated.

Cultures taken at surgery revealed a pansensitive streptococcal species. The patient was placed on intravenous cefazolin for 5 days and then oral cephalexin for 2 weeks. She continued uninterrupted paclitaxel therapy. Her surgical wound healed without difficulty and although all of her nail deformities persisted, no recurrent infections have developed with 2 years of follow-up (Fig. 4). Her nail deformities have continued to improve.

Subungual metastases of various carcinomas have been reported [7], making it important to rule out this possibility in cases of any subungual pathology in the cancer patient. A recent whole body bone scan of this patient had revealed evidence of bony metastasis to the bilateral femurs, but revealed no evidence of metastatic disease to either upper extremity.

Discussion and Literature Review

Nail abnormalities affect anywhere from 5–45% of patients receiving treatment with taxane chemotherapeutic agents [4, 5]. More specifically, weekly paclitaxel treatment is associated with an approximately 25% incidence of significant nail plate abnormalities [2, 3]. Nail dystrophy can involve virtually all of the perionychial structures, including the sterile matrix, germinal matrix, eponychial fold, and digital pulp. More common manifestations include onycholysis, chronic subungual abscess formation,

Figure 2 The left middle finger demonstrates hemosiderin staining, onycholysis, a subungual abscess, and erythema indicative of more invasive infection.

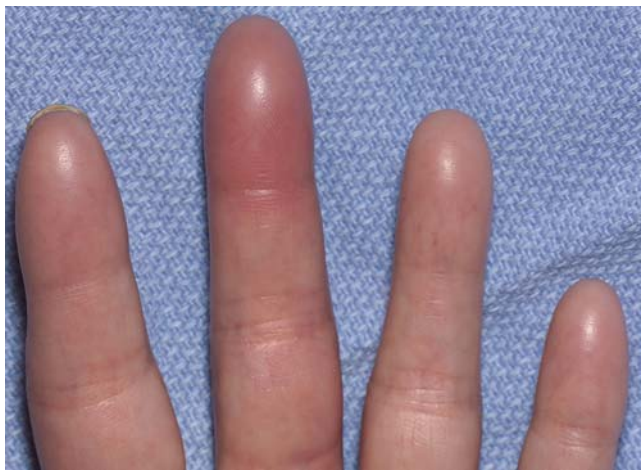

Figure 3 The volar aspect of the finger demonstrates erythema and a loss of DIP flexion crease because of swelling.

Figure 4 Patient in Fig. 2 shown 18 months after surgical treatment. Taxane therapy has not been interrupted and spontaneous resolution of the subungual dystrophy has occurred.

hemorrhagic discoloration, and subungual pain. Acute felon is not commonly reported.

Discontinuation of taxane-based therapy is not typically required and most characteristics of nail dystrophy are typically self-limited. However, acute infection must be treated as in any patient. Painful, undrained paronychia or subungual abscesses require formal drainage [6]. Nail plate removal is not indicated if purulent subungual fluid is freely draining.

This case report is of an unusual presentation of an acute felon in a patient on taxane therapy. Whereas the treatment of perionychial manifestations of taxane-based therapy is typically expectant, it is critical not to mistake an acute infection such as a felon for a more stable problem such as chronic subungual abscess. This is of particular importance in the immunocompromised oncology patient. Finally, it is important to consider the possibility of subungual metastatic disease in this setting.

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