Chemotherapy-Induced Nail Changes: An Unsightly Nuisance

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P.S. is a 53-year-old female patient with stage IIB breast cancer. In November 2000, she received Adriamycin® (Pfizer Inc., New York, NY) and Cytoxan® (Bristol-Myers Squibb, New York, NY), along with Herceptin® (Genentech, Inc., South San Francisco, CA), as part of a clinical trial.

In July 2002, the patient was found to have a left supraclavicular axillary recurrence. Because of this recurrence, P.S. received docetaxel (Taxotere®, Aventis Pharmaceuticals, Bridgewater, NJ) by IV on day 1 and 4,000 mg capcitabine (Xeloda®, Roche Laboratories Inc., Nutley, NJ) by mouth on days 2–15 for the first two cycles. Docetaxel was given by IV every three weeks (210 mg total dose). Beginning with cycle three, P.S.’s capcitabine dose was reduced because of the onset of plantar palmar erythrodysesthesia (PPE) and swelling in the hands.

When PPE was noted, the patient had inflamed, edematous hands, particularly on the tips of the fingers. In addition, small blisters developed on the tips of most of her fingers. The capcitabine dose was held until the next cycle (her fourth); as a result, her symptoms cleared within one week. During her fourth cycle, the capcitabine dose was decreased by 25%, and the PPE did not return.

After the final cycle of docetaxel and capcitabine (cycle 6), the patient reported to the oncology office with extreme nail changes and their causes, nurses must be familiar with nail anatomy and physiology. The nail unit is comprised of four epithelial parts: the nail bed, matrix, and plate (Noronha & Zubkov, 1997; Scher, Fleckman, Tulumbas, McCollam, & Enfanto, 2003). Nail changes can be unsightly and distressing. In addition to their cosmetic value, nails provide protection for the fingers and toes, contribute to tactile sensation, and assist in the manipulation of objects by the fingers (Noronha & Zubkov, 1997; Scher, Fleckman, Tulumbas, McCollam, & Enfanto, 2003). Nail changes may provide clues to illness or disease. However, before understanding nail changes and their causes, patients may never report them.

After receiving six cycles of Taxotere and Xeloda, the patient went on to receive radiation therapy to the nodal sites on the left chest. Radiation therapy was completed in March 2003. Today, P.S. is disease-free and enjoying a good quality of life.

What do oncology nurses need to know about chemotherapy-induced nail changes? Most importantly, they probably occur more often than they are reported. Patients may experience these changes but, because the symptoms do not inhibit daily activities, they may never report them.

Patients typically present with a dark discoloration of the nails, followed by nail raising and paronychia. Paronychia, an inflammation of the nail fold surrounding the nail plate, is caused by bacteria or fungi, most often staphylococci and streptococci (Dirckx, 1997). These nail changes can be unsightly and distressing.

Digital Object Identifier: 10.1188/04.CJON.527-528

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Key Words: taxoids, antineoplastic therapy

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