



# Palmar-Plantar Erythrodysesthesia

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## Case Study 1

M.J. is a 47-year-old woman who was diagnosed with epithelial ovarian cancer two years ago; she underwent total abdominal hysterectomy with bilateral salpingo oophorectomy and received adjuvant carboplatin and paclitaxel, but her cancer recurred within six months of completing adjuvant therapy. M.J. recently completed two cycles of liposomal doxorubicin 50 mg/m<sup>2</sup> every four weeks. The likelihood of obtaining a response with this regimen is 14%–20%, with stable disease reported in 30% of patients (Campos et al., 2001). M.J. arrives at the clinic and tells the nurse that she developed intermittent tingling, erythema, and slight swelling on the palms of her hands and fingers, as well as red blotches between her knees, three days after her last cycle of chemotherapy. M.J. is able to perform all self-care and work-related functions and reported that the red blotches are tender to touch but not painful. The affected skin is intact, and she denies fever, rash, urticaria, or pruritus; use of new detergents, lotions, or soaps; or exposure to any allergen. The clinical assessment confirms M.J.'s report, and the differential diagnoses include allergic reaction, palmar-plantar erythrodysesthesia (PPE), cellulitis, and contact dermatitis. The most likely diagnosis is PPE resulting from the recent liposomal doxorubicin chemotherapy.

## Discussion

M.J. is diagnosed with grade 1 PPE on her hands and fingers, as well as the pressure points between her knees. PPE is a dermatologic toxicity characterized by



FIGURE 1. FOOT WITH STAGE II PALMAR-PLANTAR ERYTHRODYSESTHESIA

Note. Photo courtesy of Cheryl Moore, RN, Cancer Center of Boston. Reprinted with permission.

erythema and dysesthesias on the palm and foot surfaces. Grade 1, which rarely affects the soles of the feet, is defined by mild erythema, swelling with or without tingling in fingertips, dry desquamation, and no alteration in function or ability to perform activities of daily living (ADL) (see Table 1). Liposomal doxorubicin-induced PPE appears to be schedule dependent and generally develops after two to three cycles of therapy. In most cases, PPE is mild and resolves in one to two weeks. Drug-dose modifications are based on the severity of the symptoms. Grade 2 PPE requires a delay in dosing for as many as two weeks or until resolved to grade 0–1; if symptoms are not resolved after two weeks, liposomal doxorubicin should be discontinued. Grade 3 PPE requires a dose delay for as many as two weeks or until resolved to grade 0–1, and the next dose should be reduced by 25%. If symptoms do not resolve after two weeks, liposomal doxorubicin should be discontinued. Patients with grade 4 PPE are bedridden or hospitalized, and dose delay and discontinuance guidelines are similar to those for grade 3 (Ortho Biotech Products, L.P., 2001).

## Case Study 2

J.E. is a 73-year-old widowed woman recently diagnosed with synchronous breast and bowel lesions that were resected with a tumor histology that revealed a primary adenocarcinoma of the bowel, metastatic to the breast. The patient has a complicated history of severe coronary artery disease, hypertension, and type II diabetes mellitus. After a multidisciplinary team meeting, J.E. agrees to begin capecitabine (Xeloda®, Roche Pharmaceuticals, Nutley, NJ) 1,250 mg/m<sup>2</sup>

given orally twice daily for 14 days followed by one week of rest. After her second cycle of capecitabine, J.E. arrives at the clinic complaining of pain on the soles of her feet, which has necessitated a change of shoes and caused a 75% reduction in the distance she is able to walk each day (see Figure 1). On examination, erythema, edema, dry desquamation, and pain on palpation of both soles of the feet are noted. The palms of her hands bilaterally are unchanged from baseline assessment, and her feet are warm, with excellent capillary refill of the nail beds. The differential diagnoses include PPE and diabetic atherosclerotic changes on the soles

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