

Cutaneous Eruption Related to Human Epidermal Growth Factor Receptor Inhibitors in Stage IV Colon Cancer

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Mrs. L, a 59-year-old Caucasian woman, presented to the oncology clinic for a follow-up visit after hospitalization for anemia and uncontrolled diarrhea. She initially presented to the emergency department with a complaint of shortness of breath and uncontrolled diarrhea. She had experienced cramp-like abdominal pain for the previous six months. Two days before her emergency room visit, Mrs. L developed a foul-smelling vaginal discharge. Upon examination, she was found to have a rectovaginal fistula and was admitted to the hospital for additional testing. Mrs. L was diagnosed with adenocarcinoma of the colon, based on findings from a colonoscopy and computed tomography scan of the abdomen and pelvis with infusion. She was scheduled for hysterectomy and tumor resection in two days.

Medical History and Surgical Report

Mrs. L is 5'8" tall and weighs 201 pounds; her body mass index is 30.6. She appears healthy. Vital signs and her physical examination are healthy except for the following. Her abdomen is distended, with hypoactive bowel sounds in all four abdominal quadrants. Her liver enzymes are elevated (alanine aminotransferase (ALT) = 60 units/L, aspartate aminotransferase (AST) = 80 units/L, alkaline phosphatase (AP) = 180 units/L (normal ranges: ALT = 6–40 units/L, AST = 10–35 units/L, AP = 33–130 units/L). In addition, her liver is enlarged and can be palpated three fingertips below the ribs.

Mrs. L is married with two children and works in an office setting. She does

not routinely seek health care except for illness treatment. She has not had a prior colonoscopy and has not had a Pap smear in 20 years. She quit smoking 30 years ago and drinks socially. Her father died from lymphoma and her mother died of complications from Parkinson disease. She has private insurance and is satisfied with her insurance plan.

In July 2007, Mrs. L underwent a total abdominal hysterectomy with a bilateral salpingo-oophorectomy and sigmoid resection of the colon with a colostomy. The pathology report confirmed T4N2G3 adenocarcinoma of the colon (stage IV). She recovered after five weeks without complications. In August 2007, Mrs. L's carcinoembryonic antigen (CEA) reading was 56 mcg/L. Five weeks after surgery, Mrs. L began a chemotherapy regimen of FOLFOX (folinic acid, fluorouracil, and oxaliplatin), bevacizumab, and cetuximab.

Chemotherapy Overview

Since the late 1990s, FOLFOX has been a standard of care for metastatic colon cancer (Goldberg et al., 2004; Saltz et al., 2007). Bevacizumab is a monoclonal antibody against human vascular endothelial

growth factor (VEGF), and cetuximab is a monoclonal antibody against epidermal growth factor receptor (EGFR). Cetuximab is approved as a single agent for the treatment of metastatic colon cancer that expresses wild-type *K-ras* (Hurwitz et al., 2005). A chemotherapy regimen of FOLFOX and bevacizumab every two weeks has been used; FOLFOX and bevacizumab have been combined with cetuximab in multiple clinical trials (see Table 1).

In August, 2007, Mrs. L was enrolled in a clinical trial of FOLFOX, bevacizumab, and cetuximab (for National Comprehensive Cancer Network guidelines, visit www.nccn.org/professionals/physicians_gls/pdf/colon.pdf; for clinical trial enrollment information, visit www.nccn.org/clinical_trials/patients.asp). On day 1, the first chemotherapy treatment was administered (390 mg/m² IV push and 4,680 mg continuous 5-fluorouracil, 388 mg/m² folinic acid, 83 mg/m² oxaliplatin, 447 mg bevacizumab, and 242 mg/m² cetuximab). On day 14, cetuximab was held for a grade 3 rash. Numerous small pustules and erythematous papules in the hair follicles developed during the first two weeks of treatment. The skin lesions were acneform and were located on the

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Digital Object Identifier: 10.1188/09.CJON.491-493