JEANNINE M. BRANT, RN, MS, AOCN®
ASSOCIATE EDITOR

Exposed Bone in Oral Cavities

Pamela Hallquist Viale, RN, MS, CS, ANP, AOCNP, and Albert Lin, MD, MPH

Case Study

Ms. N is a 54-year-old woman initially diagnosed in 2002 with stage IIIB non-small cell lung cancer, for which she received radical pneumonectomy followed by chemotherapy with carboplatin and gemcitabine. After a period of stability (i.e., approximately nine months) in which no further lesions were discovered, in a follow-up visit, she complained of lower abdominal pain, leading to the discovery of several large sclerotic lesions in her pelvis. Ms. N was diagnosed with metastatic lung cancer to the bone and began monthly therapy with zoledronic acid, a bisphosphonate approved for the treatment of metastatic lesions from lung cancer. In 2003, the patient presented with a complex ovarian mass and elevated cancer antigen 125 and began therapy for presumed ovarian cancer. Ms. N received liposomal doxorubicin and continued the monthly infusions of zoledronic acid. Her quality of life was good, and she was able to participate in her usual activities.

In 2004, Ms. N began to complain of diffuse jaw pain. The pain was unresponsive to analgesics administered over several months. On examination, the gum looked edematous with mild erythema, and the initial differential diagnosis included oral abscess. After consultation with a dentist, a full panoramic radiologic study was taken of the affected area of her jaw. The patient then presented to the clinic with a complaint of exposed bone in her jaw and gum line (see Figure 1). Ms. N was started on oral clindamycin and oral chlorhexidine 0.12% mouth rinses three times a day. She was referred to an oral surgeon for further evaluation, where avascular necrosis or osteonecrosis of the jaw (ONJ) was diagnosed.

FIGURE 1. OSTEONECROSIS OF THE JAW

Note. Image courtesy of Pamela Hallquist Viale. Reprinted with permission.

Literature Review

Osteonecrosis of bony areas, most frequently the head of the femur, has been associated with long-term or chronic corticosteroid use and is well known in the rheumatology literature (Koo et al., 2002; Zalavras, Shah, Birnbaum, & Frenkel, 2003). Excessive alcohol use also has been implicated in osteonecrosis of the femoral head (Hirota et al., 1993). One report described osteonecrosis of the femoral head after long-term, low-dose, inhaled corticosteroid therapy (Kisielinski, Niedhart, Schneider, & Neithard, 2004). Osteonecrosis has been found in patients on various chemotherapy drugs, bone marrow transplant recipients, and patients with inflammatory bowel disease (probably related to steroid use) or HIV disease (Klingenstein, Levy, Kornbluth, Shah, & Present, 2005; Siddiqui, Smith, Mashoof, & Bryk, 2004; Tauchmanova et al., 2003). In transplant recipients, avascular necrosis is believed to be related to the ability of bone marrow stromal stem cells to repopulate after stem cell transplantation (Tauchmanova et al.).

ONJ or avascular necrosis of the jaw is a condition in which the jaw's bone tissue fails to heal, usually after minor trauma such as a dental procedure involving tooth extraction. ONJ may occur in patients who have received radiation therapy to the head and neck. In the case of radiation therapy patients, the condition is termed osteoradionecrosis and usually occurs in the mandible, with approximately 50% of the cases subsequent to tooth extraction (Bagan et al., 2005; Ruggiero, Mehrotra, Rosenberg, & Engroff, 2004). Osteoradionecrosis of the mandible occurs in 5%–15% of patients receiving radiation therapy (Balogh & Sutherland, 1989) and can present with asymptomatic lesions that remain stable for several months to years. The condition may heal with conservative

Pamela Hallquist Viale, RN, MS, CS, ANP, AOCNP, is an oncology nurse practitioner in Saratoga, CA, and an assistant clinical professor in the Department of Physiological Nursing in the School of Nursing at the University of California, San Francisco, and Albert Lin, MD, MPH, is an attending oncologist at Santa Clara Valley Medical Center in San Jose, CA.

Digital Object Identifier: 10.1188/05.CJON.355-357