Radiofrequency Ablation: A Nursing Perspective

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Recent interest in minimally invasive, percutaneous therapies has resulted in less invasive and potentially safer methods of treating patients with cancer who otherwise have few conventional therapy options. Radiofrequency ablation (RFA) has emerged as a safe and predictable technology for thermal ablation in soft tissue and nerve ganglia, as well as in the liver, bone, kidneys, lungs, breasts, lymph nodes, and heart. Certain devices are approved for soft tissue ablation, unresectable liver tumor ablation, and painful bone metastases by the U.S. Food and Drug Administration. This local, minimally invasive, image-guided therapy has been shown to be a safe, effective, and relatively inexpensive treatment for patients who are not surgical candidates (Christians et al., 2001; Goldberg et al., 1998; Livraghi et al., 1997; Solbiati et al., 1997). As RFA becomes available for more widespread use, oncology and radiology nurses should be familiar with how to properly care for patients receiving this treatment. Nurses function as an integral part of a multidisciplinary team in caring for patients undergoing RFA. A brief description of the RFA procedure is presented with an overview of the nurse’s role in managing and caring for patients undergoing RFA.

**Indications and Contraindications**

Although RFA is cleared by the U.S. Food and Drug Administration for ablation of soft tissue, most experience has been in treatment of primary and metastatic tumors of the liver (Curley et al., 1999; Dromain et al., 2002). Use of RFA also has been documented in the successful treatment of osteoid osteoma (Rosenthal, Hornicek, Torriani, Gebhardt, & Mankin, 2003; Woertler et al., 2001), painful bone metastases (Dupuy, Hong, Oliver, & Goldberg, 2000; Goetz et al., 2004), small renal cell tumors (< 3 cm) (Hwang et al., 2004), lung cancer (Gadaleta et al., 2004; Steinke, King, Glenn, & Morris, 2004a, 2004b), adrenals (Mayo-Smith & Dupuy, 2004; Melliza & Woodall, 2000; Wood, Abraham, Hvizda, Alexander, & Fojo, 2003) and painful soft tissue neoplasms (Locklin, Mannes, Berger, & Wood, 2004). RFA also has been used in nerve ganglia for treatment of pain syndromes such as trigeminal neuralgia (Onofrio, 1975; Oturai, Jensen, Eriksen, & Madsen, 1996), cluster headaches (Sanders & Zuurmond, 1997), chronic segmental thoracic pain (Stolker, Vervest, & Groen, 1994), cervicobrachialgia (Slappendel et al., 1997), and plantar fasciitis (Sollitto, Plotkin, Klein, & Mullin, 1997). Limited use of RFA in breast cancer (Jeffrey et al., 1999) has been documented.

**Radiofrequency Ablation Procedure**

RFA usually is performed on an outpatient basis under conscious sedation, although general anesthesia is preferred by many clinicians to minimize procedural pain. Occasionally, conscious sedation allows for frequent neurologic checks if the ablation zone is near a major nerve. RFA can be performed percutaneously, laparoscopically, or with open surgery. It involves the placement of a thin needle (14–17.5 gauge) into the...