Radiofrequency Ablation: A Nursing Perspective

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Radiofrequency ablation (RFA) has emerged as a safe and predictable technology for treating certain patients with cancer who otherwise have few treatment options. Nurses need to be familiar with all phases of the RFA procedure to create an optimal environment for patients.

Before RFA, nurses should focus on patient education and aggressive hydration. During the procedure, nurses can prevent injury by placing grounding pads appropriately, monitoring vital signs, and medicating patients as needed. After RFA, nurses should assess the skin puncture site, provide adequate pain relief, and, again, hydrate patients. Nurses who care appropriately for RFA recipients may help to improve patient outcomes and make an otherwise frightening procedure more comfortable.

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, 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.

RFA of soft tissue may be indicated if patients are not surgical candidates or refuse surgery or if a tumor is not surgically resectable because of location. Goals for RFA for soft tissue neoplasms include cure, debulking, and palliation. With a goal of palliation or decreasing tumor burden, ablating the entire tumor may not be necessary. Contraindications of RFA include uncorrectable coagulopathies and uncontrolled infection. Otherwise, each patient is evaluated individually, carefully weighing the risks and benefits of using RFA to potentially reach a realistic treatment goal.

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