

# Radiofrequency Ablation

## Nursing Issues

Radiofrequency thermal ablation is FDA-approved for soft tissue ablation and is frequently performed on an outpatient basis under conscious sedation, although we prefer general anesthesia often to minimize procedural pain. Before the procedure, the patient will need blood tests including PT, PTT, CBC, BUN, creatinine, tumor markers and if treating the liver, hepatic function tests. Also, consideration should be made if the patient is taking coumadin, heparin, aspirin or any other anticoagulant. The patient should be notified the day before RFA to drink up to 2000 ml of fluid if not medically contraindicated. Small quantities of clear liquids may be allowed up until 2 hours prior to the procedure, and nothing else by mouth until after recovery, however sedation and anesthesia guidelines may have local practice differences, and NPO after midnight is a safe order. The patient will need intravenous access and oxygen and suction should be immediately available. Heart rate, respiratory rate, and oxygen saturation should be continuously monitored and blood pressure recorded at least every 5 minutes throughout the procedure. Patient comfort is central to safety during radiofrequency ablation. The nurse should anticipate giving IV fluids and conscious sedation (usually with midazolam and fentanyl) as ordered. Some patients may require deep sedation (monitored anesthesia care) or general anesthesia to maximize comfort and safety. This is often the case with tumors treated for pain control.

Post-procedure care is similar to the care of the patient who has had an image-guided percutaneous biopsy. Vital signs should be monitored per protocol. Pain medication should be given as needed post procedure with consideration to pain type and intensity, duration, past experiences with pain and responses to analgesics. Inpatients may benefit from patient controlled analgesia (PCA), which should be immediately available post-RFA. RFA at the dome or capsule of the liver near the diaphragm usually causes more pain, which may radiate to the shoulder. In addition, RFA at the dome of the liver has been associated with pleural effusion and requires close monitoring of the patient's respiratory status in the days and weeks following RFA. The low rate of bleeding may be due to the coagulation effects of the heat upon treated tissue and cauterization of the needle track as the needle is being removed. Tachycardia or hypotension should be taken seriously, however, and we have a low threshold to rescan the area with CT or ultrasound. Some local site tenderness is not unusual. Patients may feel hot or feverish, and may experience low-grade fever in the hours and days following the procedure. This can be an expected sign, and is more common with very large treatment volumes or large or multiple tumors. A fever above 100.5 or 101.0 F should be taken seriously, and the patient is instructed to call the department for guidance, should this occur, as blood cultures, CT, drainage, thoracentesis, or antibiotics may be indicated.

Adequate hydration following the procedure is important to limit the potential risk of a tumor-lysis like syndrome or a post-embolization like syndrome. The exact rate of fluid administration is of course patient-specific, and may depend on the size of the treatment

volume as well as underlying cardiovascular and renal medical issues. In general, oral fluids should be encouraged in the days following the procedure, in the absence of hypertension, congestive heart failure, renal failure, or other fluid management conditions. Once again, patients should not travel on the day of the procedure. Some mild soreness at the site of puncture may persist for a few days at the puncture site, but is not always present. If any questions arise, please call the NIH Clinical Center Diagnostic Radiology Department / Special Procedures at 301-594-4511