



1460 NE Medical Center Drive ❖ Bend Oregon 97701 ❖ (541)382-6633

### ***What is Radiofrequency Ablation?***

Radiofrequency ablation, sometimes referred to as RFA, is a minimally invasive treatment for primary or metastatic liver cancer. The procedure is performed by a specially trained radiologist in the computed tomography (CT) scanning suite. During the RFA procedure, ultrasound and CT are used to help guide a needle electrode through your skin and into a tumor. High-frequency electrical currents are created by a small generator and passed between the electrode and the grounding pads placed on your skin, creating heat that destroys or *ablates* the abnormal cells. Because healthy liver tissue is better able to withstand heat, radiofrequency ablation is able to destroy a tumor and only a small rim of normal tissue around the edges of the tumor. At the same time, heat from radiofrequency energy closes small blood vessels and lessens the risk of bleeding. The dead tumor cells are gradually replaced by scar tissue that shrinks over time.

In general, radiofrequency ablation is most effective treating tumors that are less than two inches in diameter. It may be used in addition to chemotherapy or radiation therapy or as an alternative to surgical treatment. RFA is an effective treatment option if you:

- are not a good candidate for surgery because your tumor is difficult to reach
- have other medical conditions that make surgery especially risky
- would not have enough liver tissue left for the organ to function adequately following the surgical removal of a tumor
- have liver tumors that have not responded to chemotherapy or that have recurred after being removed surgically
- have several small liver tumors that are too spread out to be removed surgically

#### ***Before your Procedure:***

- Tell us if you have allergies to medicines or x-ray contrast.
- Tell us if you are diabetic and take Metformin (Glucophage, Glucovance)
- Tell us if you take any blood thinning medications - aspirin, ibuprofen or Coumadin®. You will be asked to stop taking them for at least 5 days before the procedure
- Tell us if you have a pacemaker, implanted defibrillator, metal prosthesis (joint replacement), bile duct stents or previously had bile duct or bowel surgery.
- We will schedule a consult appointment for you to meet with the radiologist to ask any questions you have about the procedure and ensure that you will be a good candidate for this treatment.
- Prior to your procedure you will receive two confirmation phone calls – one from CMI regarding the procedure and one from a pre-surgical RN who will gather admission history information.
- Necessary pre-procedure lab tests will be done the day of your procedure.

#### ***Preparation Instructions:***

- We will provide you with a bottle of Magnesium Citrate, a mild laxative. At 2:00pm the afternoon before your procedure, drink the 10 ounces of Magnesium Citrate. It may taste better if you chill it before drinking. You will want to stay near the bathroom after drinking this.
- Eat a light meal the evening before your procedure. Do not eat or drink anything after midnight. Do not eat anything the morning of your procedure.
- Take your normal medicines with a sip of water.
- If you are diabetic and take Metformin, take your normal dose the morning of your appointment. Then, do not take Metformin for at least 48 hours and resume only after confirmation of a normal creatinine result.
- For your consult appointment you will check-in at the St Charles, Bend *out-patient* admitting desk, first floor.

***Consult appointment date:*** \_\_\_\_\_ ***Time:*** \_\_\_\_\_

- For your procedure appointment you will check-in at the St Charles, Bend *main* admitting desk. You will then be taken to the pre-surgical admission department for lab work. You will wait in this area until it is time to be taken to CT.

***Procedure appointment date:*** \_\_\_\_\_ ***Time:*** \_\_\_\_\_

- You will spend the night in the hospital after the procedure so plan to have someone drive you to and from the hospital.

### ***During and After the Procedure:***

The procedure will be performed in the CT suite of the radiology department at St Charles Medical Center in Bend. General anesthesia will be used. When you enter the CT scanning suite we will start an IV in your arm for delivery of medicines and fluids. The anesthesiologist will monitor your blood pressure, heart rate and oxygen level during the procedure. You'll be in the CT scanning suite from 1 – 4 hours. After the procedure, you'll spend time in the recovery room then be admitted for an overnight stay in the hospital.

Mild pain immediately following RFA will be controlled by medication given through your IV or by injection. After you leave the hospital any mild discomfort you experience can be controlled by oral pain medications. Only about two percent of patients will still have pain a week following RFA. A few patients feel nauseous, but this can also be relieved by medication.

Roughly one in four patients may develop a "post-ablation syndrome" with flu-like symptoms that appear three to five days after the procedure and usually last about five days. An occasional patient may remain ill for two to three weeks. Acetaminophen taken by mouth can be used to control fever.

Be sure to drink extra fluids such as water or juice for a few days. You should be able to resume your usual activities within a few days.

A one month follow-up CT scan will be performed to monitor the effectiveness of the treatment.

### ***After the procedure, be sure to call us (phone numbers listed below) if you have:***

- Severe pain around the site
- Temperature greater than 101° F
- Pain beyond 48 hours
- Nausea or vomiting that won't go away

### ***Benefits:***

- Radiofrequency ablation can be an effective treatment for primary liver cancer and for cancers that have spread to the liver in select patients whose disease is unsuitable for surgical resection.
- In most studies, more than half of the liver tumors treated by radiofrequency ablation have not recurred.
- Treatment-related serious complications are infrequent and discomfort is minimal.
- Radiofrequency ablation may be used repeatedly to treat recurrent liver tumors.
- Recovery from the procedure is rapid so that chemotherapy may be resumed almost immediately.
- Radiofrequency ablation is less expensive than other treatment options.
- No surgical incision is needed—only a small nick in the skin that does not have to be stitched closed.

### ***Risks:***

- Any procedure where the skin is penetrated carries a risk of infection. The chance of infection requiring antibiotic treatment appears to be less than one in 1,000.
- Depending on the site of treatment, radiofrequency ablation may cause brief or, rarely, long-lasting shoulder pain; inflammation of the gallbladder that subsides after a few weeks; damage to the bile ducts resulting in biliary obstruction; or thermal damage to the bowel.
- Some cases of bleeding have been reported but it usually stops on its own. If bleeding is severe, an additional procedure or surgery may be needed to control it.
- Organs and tissues near the liver, such as the gallbladder, bile ducts, diaphragm and bowel loops, are at risk of being injured. Although this occurs only 3 to 5 percent of the time, it may require surgical correction. The risk of this complication is related to the location of the liver tumor that is treated.
- Severe pain after RFA is uncommon, but may last a few days and require a narcotic to provide relief.

***Call us any time before or after the procedure with questions or concerns:  
(541)382-4321x7722 CT scanning department at St Charles Medical Center  
(541)382-6633 – Radiologist's Office***