仁安醫院
UNION HOSPITAL

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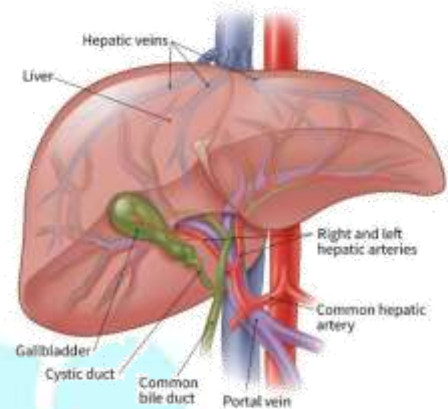
Procedure Information

Radiofrequency Ablation for Liver Tumors

Introduction

Radiofrequency Ablation (RFA) is a nonsurgical procedure that uses radio waves which travel through electrodes to heat and destroy abnormal cells. RFA may be used to treat cancer and other conditions. This procedure is the most commonly used ablation therapy for hepatocellular carcinoma (HCC) which can be performed through percutaneous, laparoscopic or surgical approaches depending on the location and size of the tumors. Through this procedure, only the target part of liver tissue will be destroyed and most of the normal liver tissue will not be affected. RFA may be combined with other treatments to treat liver tumors.



Source: https://www.cancer.org/cancer/liver-cancer/treating/embolization-therapy.html

Indications

1. HCC at an early stage
2. Unresectable HCC, the tumor is not more than 5 cm diameter in size that is confined to the liver, and the tumor is not near the major blood vessels and the major bile ducts
3. "Bridging" therapy to impede tumor progression for the patient who is waiting liver transplantation
4. Regional recurrence in the liver after previous resection of HCC

Outcomes

It is expected that the liver tumor cells are completely destroyed.

Complete necrosis of tumor following RFA are 90-99% for tumors size less than 5 cm. Complete necrosis rates are higher for smaller tumors. Local efficacy is lower for the tumors proximal to large blood vessels.

Procedures

1. Depending on the approach selected for RFA, the procedure can be performed under local anaesthesia with intravenous sedation (percutaneous approach), or under general anaesthesia (laparoscopic or surgical approach).
2. The procedure is performed under image guidance.
3. RFA electrode is inserted into the site of the tumor
   - Percutaneous approach
     i. RFA electrode is inserted through the skin and into the site of the tumor.
   - Laparoscopic approach
     i. Several small incisions are made in the abdomen.
     ii. A camera is inserted through the small incisions.
     iii. RFA electrode is inserted through the skin into the site of the tumor.
   - Surgical approach
     i. A larger incision is made in the abdomen to expose the liver.

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ii. RFA electrodes is inserted into the site of the tumor directly.

4. Ablate all viable tumor tissue and an adequate tumor-free margin by heating the tumor tissue to temperatures exceeding 60℃.
5. The incision site(s) (if any) is closed with stitches, and the wound(s) is covered with sterile dressing material.

Possible Risks and Complications

1. Complications of liver tumor RFA occurs in 3.5% of patients
   - Hepatic injuries including liver infarction, liver abscess, bile duct injury, portal thrombosis, and hepatic failure
   - Extrahepatic organ injures including injury to heart, lung, intestine, gallbladder, diaphragm, and skin burn
   - Death due to RFA is less than 0.05%
2. Postablation syndrome occurs in 36% of patients
   - Fever, malaise, chills, right upper quadrant pain, nausea, and elevated serum liver enzyme
   - Symptoms are usually transient.
3. Complications related to anaesthesia such as heart attack, stroke, and venous thromboembolism
4. Complications related to surgery such as bleeding, hematoma, infection, and wound dehiscence

** The risks listed above are in general terms and the possibility of complications is not exhaustive. Please understand that even though all procedures are carried out with utmost professionalism and care this does not rule out the possibility of complications arising.

Pre-procedure Preparations

1. The procedure and possible complications will be explained by the doctor and a consent form must be signed prior to the procedure.
2. Please inform the doctor and nurse all your past medical history, previous surgical operations, current medication and any complication with drug or anaesthesia.
3. Several drugs, herbs and supplements which influence coagulation ability should be withheld few days before the procedure.
4. Baseline investigations such as blood tests, chest x-ray, ECG, CT and MRI scan may be performed.
5. Correction with transfusion of blood products may be needed before the procedure.
6. No food or drink six hours before the procedure.
7. Good hygiene can prevent wound infection. Please clean up yourself on the day of procedure.
8. Intravenous access is established.
9. Prophylactic antibiotic is administered.
10. Please change into a surgical gown after removing all clothing including undergarments, dentures, jewellery and contact lenses.
11. Please empty your bladder before the procedure.

Post-procedure Instructions

1. <u>After general anaesthesia, you may:</u>
   - experience discomfort in the throat after tracheal intubation.
   - experience side effects of anaesthesia including tired, drowsy, nausea or vomiting. Inform the nurse if symptoms persist or worsen.
2. In general, diet is allowed gradually after recovery from anaesthesia.
3. You are checked often for possible bleeding from the puncture site, pain and any other abnormality.
4. Please inform the nurses of wound pain. Proper pain relief treatment will be provided.
5. If the procedure is performed percutaneously, you may be discharged on the same day of the procedure. If it is performed laparoscopically or surgically, you may stay in the hospital for a few days.

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Advices on Discharge

1. Please comply with medication regime as prescribed by your doctor.
2. Complete the course of antibiotic started before the procedure to lower the risk of infection.
3. It is normal to have a minor fever and nausea up to 1 week.
4. Keep the wound dressing clean and dry. If the procedure is performed percutaneously, the wound dressing can be removed a few days after the procedure. If the procedure is performed laparoscopically or surgically, the stitches will be removed within 2 weeks or dissolved within 3 weeks.
5. Avoid strenuous activity for 2 weeks.
6. A contrast CT scan is arranged at one to two weeks after the procedure for checking the completeness of the ablation. Any residual tumors detected will be treated with another RFA session.
7. Immediately consult your doctor or return to hospital for professional attention in the event of swelling or pus discharge from the wound, bleeding, abdominal pain or distension, shivering, high fever over 38°C or 100°F, or any other unusual symptoms.
8. Any follow-up consultations should be attended as scheduled.

Should there be any enquiries or concerns, please consult the attending doctor.

Under the professional care of the doctor, you will gradually recover. We wish you all the best during your treatment and recovery.

If you have any questions after reading the entire leaflet, please write them down in the spaces provided in order for the doctor to further follow-up.

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Compiled by Union Hospital Operating Theatre (OT) Governance Committee

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