



## 病人教育

放射/造影服務部



# 射頻燒灼術 - 治療固態腫瘤

本手冊解釋什麼是射頻燒灼術，以及使用射頻燒灼術治療固態腫瘤的預期步驟。

### 爲什麼需要這種治療？

你的醫生發現你體內某個器官（通常是肝臟、腎臟或肺部）有一個腫瘤（一些腫瘤）。治療腫瘤的方案有許多，但是某些方案對某些人會更有效。

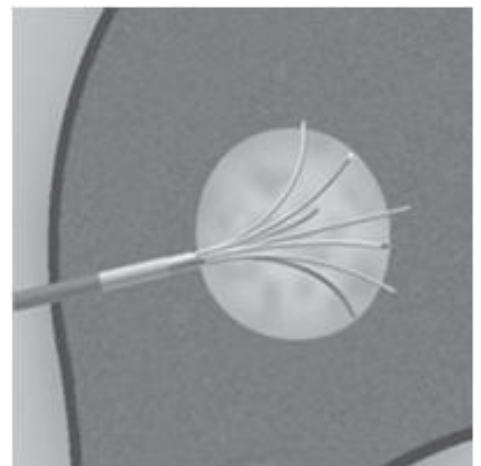
我們的專家小組相信，使用熱探頭來燒灼（破壞）腫瘤是目前爲你進行治療的最佳方案。在某些案例中，這種治療可殺死腫瘤。除了這種方案，也會建議你考慮其他方案（例如化療、化療栓塞術或手術）。

### 射頻燒灼術如何起作用？

可以用熱來燒死癌細胞。在射頻燒灼術 (RFA) 中，醫生將一個特殊探頭穿過你的皮膚插入到腫瘤中。探頭是由 CT 掃描或超聲波（造影技術）引導插入腫瘤的。

探頭帶有一些電線，這些電線進入到腫瘤中或在腫瘤附近。將探頭接通電流後，探頭便會加熱，從而燒死癌細胞。

燒灼術只會燒死腫瘤本身以及腫瘤四周小部分正常組織的邊界。燒灼形成的疤痕將會隨著時間而縮小。



帶有電線的熱探頭進入腫瘤

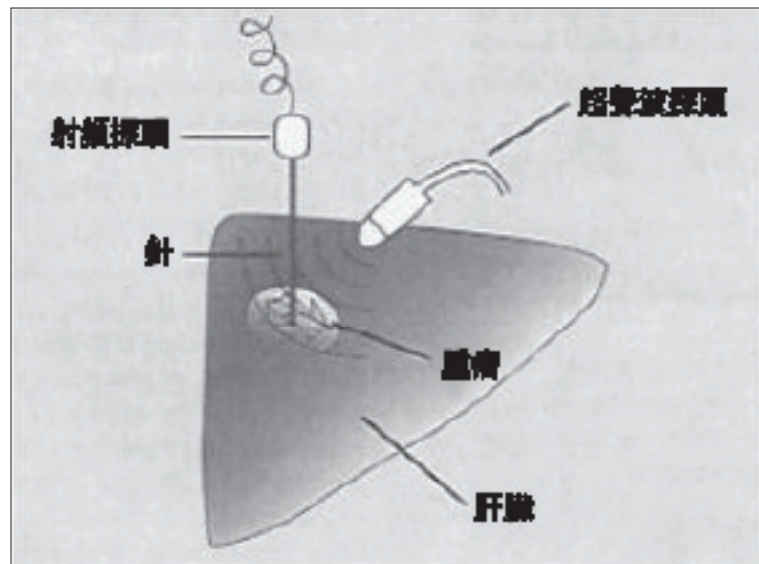
UW Medicine

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## 燒灼術如何進行？

燒灼術是由一名介入放射專家執行的，介入放射專家是專門做這類手術的醫生。因為在治療時你必須完全靜止不動，所以我們將給你進行全身麻醉，使你睡著。

- 手術是用一台介入放射儀或一台電腦斷層 (CT) 掃描儀做的。手術大約要 1 至 3 個小時完成，這取決於所治療腫瘤的大小和數量。
- 當你睡著後，放射技師將用一種專用肥皂為你清潔手術部位周圍的皮膚。如果你有任何過敏，請告訴該技師。該技師可能需要為你剃去某些手術部位皮膚上的體毛。



探頭正在進入一個肝臟腫瘤

- 你的醫生將把探頭插入你的腫瘤。可能需要將探頭多次插入同一個腫瘤。如果你有多個腫瘤，在 1 節時段裏可能會對其中幾個腫瘤進行治療。
- 燒死腫瘤後便取出探頭。治療留下的唯一痕迹是在插入探頭部位的皮膚上有一個很細的四分之一英寸的手術切痕。

## 有任何副作用嗎？

- 所有創傷性醫療手術都有一定的風險。大多數病人在做完此手術後都恢復得很好，沒有出現任何重大問題。
- 你會感到穿刺部位周圍有些痛和淤腫。這種情況會持續幾天。

- 最常見的嚴重問題是有血液從探頭置放處流入腹腔。
- 可能會創傷了某個重要的器官（例如腸），但這種情況非常罕見。這可能會非常嚴重。你的醫生將會非常小心來避免出現這種傷害。

手術前，你的醫生會將這些風險告訴你。請確保你的所有問題和疑慮都得到解決。

## 手術前

- 你需要由麻醉科對你進行手術前評估。我們將為你安排這次評估。
- 一名護士協調員會在你手術前一天的下午打電話給你。如果你的手術是在星期一進行，該護士會在前一周星期五打電話給你。該護士將給你最後的指示，並回答你提出的任何問題。
- 如果你的英語不是很好，不能明白這些指示或手術細節，請立即告訴我們。我們會安排一個醫院翻譯員協助你。**家人或朋友也許不能為你翻譯。**
- 你多半需要在手術前的 14 天內完成所有驗血。有時候，我們是在你來到醫院做手術時為你驗血。我們會告訴你我們是否在那天之前需要你的血液樣本。
- 如果你在服用任何血液稀釋藥物（例如 Coumadin、Lovenox、Fragmin 或 Plavix），你可能需要在手術前 3 至 9 天停服這些藥物。你將獲得有關這方面的指示。
- 如果你患有糖尿病並在注射胰島素或甲福明二甲雙胍（二甲雙胍），你將在手術那天獲得有關停服或調整劑量的指示。

## 手術前一天

你必須在手術前嚴格遵守以下指示：

- 手術前一天，你可以如常進食。
- 從手術前 6 小時開始，你只能飲清流質（透明的液體，例如水、雪碧、紅莓汁或淡茶）。
- 從手術前 2 小時開始：
  - 不能用口進食**任何東西**。
  - 如果你必須服藥，**只能**飲一口水送藥。
  - 切勿服用維他命或其他營養補充藥。空腹服用這些藥會引起腹部不適。

- 如果你是門診病人，你**必須**有一個成年人負責開車送你回家，並在那天的剩餘時間陪伴你。**你不能自己開車回家，或乘坐公共汽車、的士或穿梭巴士回家。**

### 手術當天

- 手術當天，服用所有你常用的其他藥物。**切勿**漏服這些藥物，除非你的醫生或護士叫你停止服用。
- 隨身攜帶一份你服用的所有藥物的清單。
- 請準備留在醫院大半天時間。有時候手術要延遲開始，這是經常發生的，因為我們需要治療其他突發的和急症的病人。如果出現這種情況，謝謝你的耐心等待。
- 除非已告訴你，否則你必須在醫院 3 樓（主層）的入院部報到。入院部位於大廳右側，詢問台後面。
- 會有一個職員帶你到術前準備區。在那裏，護士將為你做健康評估。你的家人或朋友可以在那裏陪著你。
- 開始靜脈注射。將透過靜脈給你注射液體和藥物。
- 介入放射科醫生將會向你介紹這次手術，並要求你簽署一份同意書，如果你尚未簽署的話。這時你可以向醫生問問題。

### 手術

- 護士將帶你到放射室。該護士將在整個手術過程中陪伴著你。
- 你將躺在一張平坦的手術臺上，讓醫生能夠用 X 光看到你的身體內部。
- 我們將在你的身體上放置一些電線，以便我們可以監視你的心率。
- 你的手臂將套上一個血壓套。該套會不時充氣以檢查你的血壓。
- 一名麻醉師將給你藥物讓你睡覺。該麻醉師將在手術過程中以及在你的意識恢復後監視你的情況。

## 手術後

- 你醒來後，要進入醫院的觀察室。那裏的護士將繼續監視你手術後的情況。
- 你多半能夠吃喝東西，你的家人可以探訪你。
- 當你完全清醒、能夠進食、如廁和行走後，你便可以回家了。
- 很少出現並發症。如果出現並發症，我們可能需要將你留院一晚，以便能夠監視你的情況或為你治療。
- 在你離開醫院前，你的護士將會告訴你你能夠進行哪些活動，如何護理你的手術切口以及其他重要指示。

## 回到家後

- 當天的其餘時間在家休息。確保有一個家人、朋友或照顧者幫助你。你可能會感到困倦欲睡，或有些短期失憶。
- 在 24 小時內，**切勿**：
  - 駕駛汽車或操作機器
  - 喝酒
  - 作出重要的個人決定或簽署法律文件
  - 負責照顧另一個人
- 燒灼術後通常只有輕微的疼痛。如果你的醫生同意你服用醋氨酚 (Tylenol)，這種藥應該可以舒緩你感到的任何不舒服症狀。如果你的醫生預期你會有更嚴重的疼痛，將會給你開處方來購買更強的止痛藥。
- 一旦開始進食，便可以恢復服用你的藥物。**只**服用你的醫生為你開的或同意你服用的藥物。
- 醫生可能會開給你一些藥物，幫助預防感染或胃潰瘍。服用開給你的所有藥物，直到服完為止。

## 有任何問題嗎？

你的問題很重要。如果你有任何問題或疑慮，請致電你的醫生或保健提供者。UWMC 診所的醫護人員也可以隨時提供幫助。

放射/造影服務部：  
206-598-6200

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## 何時打電話給我們

如果出現以下情況，**立即**打電話給我們：

- 腹痛
- 發燒超過 101°F (38.3°C) 或發冷
- 頭暈
- 嘔吐

## 打電話給誰

介入放射科護士協調員.....206-598-6897

手術安排處.....206-598-6209

下班時間（下午 5 點至上午 7 點），周末和假節日

找值班的介入放射科醫護人員.....206-598-6190

## 如果你要看急診

**直接去最近的急診室，或致電 9-1-1。**切勿等待聯繫我們的某個醫護人員。

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**Radiology/Imaging Services**  
Box 357115

1959 N.E. Pacific St. Seattle, WA 98195  
206-598-6200



# Radiofrequency Ablation to Treat Solid Tumors

**This handout explains what radiofrequency ablation is and what to expect when you have it done to treat solid tumors.**

## Why do I need this treatment?

Your doctors have found a tumor (or tumors) in an organ in your body (usually the liver, kidney, or lung). There are many treatments for tumors, but certain ones work best for certain people.

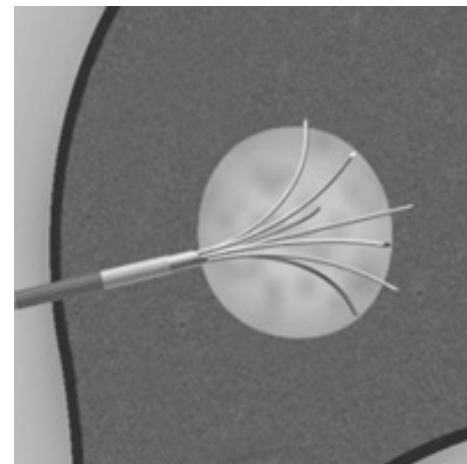
Our team of experts believes that *ablation* (destruction) of the tumor with a heat probe is the best option for you at this time. In some cases, this treatment will destroy the tumor. After this, other options (such as chemotherapy, chemoembolization, or surgery) may also be advised for you.

## How does radiofrequency ablation work?

Heat can be used to destroy cancer cells. In radiofrequency ablation (RFA), a special probe is inserted through your skin into the tumor. The probe is guided into the tumor using CT scans or ultrasound (imaging techniques).

The probe has wires that pass into and near the tumor. An electric current is passed through the probe, which heats and destroys the cancer cells.

Only the tumor itself and a small border of normal tissue around it will be destroyed. The scar that is formed will shrink over time.

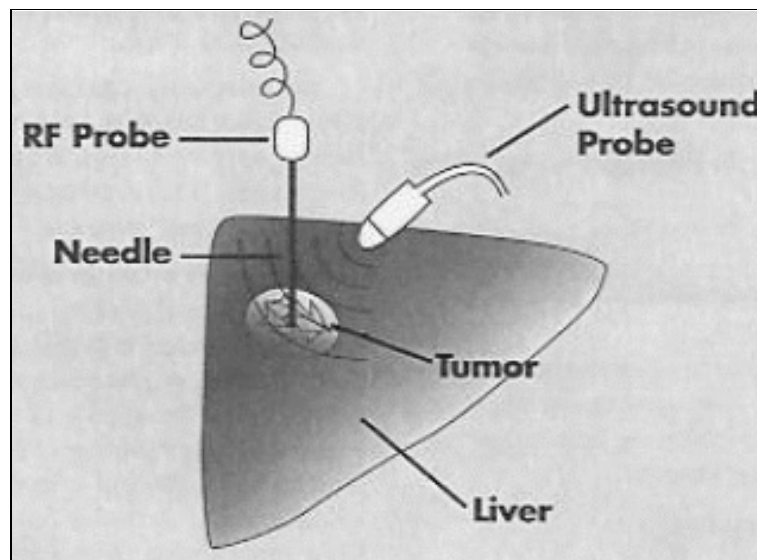


The heat probe with wires going into a tumor

## How is the procedure done?

The procedure is done by an *interventional radiologist*, a doctor who specializes in this type of procedure. Because you must be perfectly still during the treatment, we will give you *general anesthesia* to make you sleep.

- The procedure is done in an interventional radiology suite or a *computed tomography* (CT) scanner. It takes about 1 to 3 hours, depending on the size and number of tumors being treated.
- Once you are asleep, a radiology technologist will clean your skin around the area of your procedure with a special soap. Tell this person if you have any allergies. The technologist may need to shave some hair in the area where the doctor will be working.



A probe going into a liver tumor

- Your doctor will insert the probe into your tumor. The probe may need to be inserted more than once into the same tumor. If you have many tumors, several of them may be treated in 1 session.
- The probe is removed after the tumor is destroyed. The only sign of the treatment will be small quarter-inch nicks in your skin where the probes were placed.

## Are there any side effects?

- All invasive medical procedures involve some risk. Most patients do very well after this procedure, without any major problems.
- You may have some pain and bruising around the puncture site. This may last for several days.



- The most common serious problem is bleeding into the abdomen from the probe placement.
- Very rarely, an important organ (such as the bowel) can be injured. This can be very serious. Your doctor will take great care to avoid this kind of injury.

Your doctor will talk with you about these risks before the procedure. Please be sure that all of your questions and concerns are addressed.

## Before Your Procedure

- You will need a pre-procedure assessment by the Anesthesia department. We will schedule this visit for you.
- A nurse coordinator will call you the afternoon before your procedure. If your procedure is on a Monday, the nurse will call you the Friday before. The nurse will give you final instructions and answer any questions you have.
- If you do not understand English well enough to understand these instructions or the details of the procedure, tell us as soon as possible. We will arrange for a hospital interpreter to assist you. **A family member or friend may not interpret for you.**
- You most likely will need blood tests done within 14 days of your procedure. Sometimes, we do this when you arrive for your procedure. We will let you know if we need a blood sample before that day.
- If you take any blood-thinning medicines (such as Coumadin, Lovenox, Fragmin, or Plavix), you may need to stop taking the medicine for 3 to 9 days before the procedure. You will receive instructions about this.
- If you have diabetes and take insulin or metformin (Glucophage), you will receive instructions about holding or adjusting your dose for the day of your procedure.

## Day Before Your Procedure

You must closely follow these instructions before your procedure:

- The day before the procedure, you may eat as usual.
- Starting **6 hours** before the procedure, you may only have *clear liquids* (liquid you can see through, such as water, Sprite, cranberry juice, weak tea)
- Starting **2 hours** before your procedure:
  - Take **nothing** at all by mouth.
  - If you must take medicines, take them with **only** a sip of water.
  - Do not take vitamins or other supplements. They can upset an empty stomach.

- If you are an outpatient, you **must** have a responsible adult drive you home and stay with you the rest of the day. **You may NOT drive yourself home or take a bus, taxi, or shuttle.**

### **On the Day of Your Procedure**

- Take all of your other usual medicines on the day of the procedure. Do **not** skip them unless your doctor or nurse tells you to.
- Bring a list of all the medicines you take with you.
- Please plan to spend most of the day in the hospital. If there is a delay in getting your procedure started, it is usually because we need to treat other people with unexpected and urgent problems. Thank you for your patience if this occurs.
- Unless told otherwise, check in at Admitting on the 3rd (main) floor of the hospital. Admitting is to the right and behind the Information Desk in the lobby.
- A staff member will take you to a pre-procedure area. There, a nurse will do a health assessment. Your family or friend can be with you there.
- An IV line will be started. You will be given fluids and medicines through the IV.
- An interventional radiology doctor will talk with you about the procedure and ask you to sign a consent form if that has not already been done. You will be able to ask questions at that time.

### **Your Procedure**

- The nurse will take you to the radiology suite. This nurse will be with you for the entire procedure.
- You will lie on a flat table that allows the doctor to see into your body with X-rays.
- Wires will be placed on your body. These allow us to monitor your heart rate.
- You will have a cuff around your arm. It will inflate from time to time to check your blood pressure.
- An anesthesiologist will give you medicine to make you sleep. This person will monitor you during the procedure and while you recover afterward.

## After Your Procedure

- Once you are awake, you will go to a short-stay unit the hospital. A different nurse will monitor you there.
- You will most likely be able to eat and drink. Your family may visit you.
- When you are fully awake and are able to eat, use the restroom, and walk, you will be able to go home.
- Complications are rare. If they occur, we may need to keep you in the hospital overnight so that we can monitor you or treat you.
- Before you leave the hospital, your nurse will tell you what activities you can do, how to take care of your incision, and other important instructions.

## When You Get Home

- Relax at home for the rest of the day. Make sure you have a family member, friend, or caregiver to help you. You may feel drowsy or have some short-term memory loss.
- For 24 hours, do **not**:
  - Drive a car or use machinery
  - Drink alcohol
  - Make important personal decisions or sign legal documents
  - Be responsible for the care of another person
- There is usually only mild to moderate pain after an ablation. If your doctor says it is OK for you to take acetaminophen (Tylenol), this should ease any discomfort you have. If your doctor expects you to have more severe pain, you will receive a prescription for a stronger pain medicine.
- Resume taking your medicines as soon as you start to eat. Take **only** the medicines that your doctors prescribed or approved.
- You may be given medicines to help prevent infection or stomach ulcers. Take all of your medicines as prescribed until they are gone.

## Questions?

Your questions are important. Call your doctor or health care provider if you have questions or concerns. UWMC clinic staff are also available to help.

Radiology/Imaging  
Services:  
206-598-6200

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## When to Call

Call us **right away** if you have:

- Abdominal pain
- Fever higher than 101°F (38.3°C) or chills
- Dizziness
- Vomiting

## Who to Call

Interventional Radiology nurse coordinator ..... 206-598-6897

Procedure Scheduling ..... 206-598-6209

After hours (between 5 p.m. and 7 a.m.), and on weekends and holidays  
*Ask for the Interventional Radiology Fellow on call*..... 206-598-6190

### *If You Have an Emergency*

**Go directly to the nearest Emergency Room or call 9-1-1.** Do not wait to contact one of our staff.

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**Radiology/Imaging Services**  
Box 357115

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