



## Catheter Ablation for Arrhythmias

### **1. What is catheter ablation for arrhythmias?**

This procedure is used for both examination and treatment for arrhythmias. It involves puncturing the blood vessels in the groin and right jugular vein, placing several electrode wires, and guiding them through the blood vessels to enter the right atrium, atrioventricular node, right ventricle, and coronary sinus of the heart. If necessary, the wires may also be placed in the left atrium and left ventricle to measure the electrical potential that triggers heart palpitations.

### **2. Principles and methods of catheter ablation for arrhythmias**

To identify and treat arrhythmias, various electrical stimulation methods are combined with medication. Anesthesia is administered during the examination, with local or general anesthesia used depending on the patient's condition. Throughout the examination, two sets of electrocardiogram monitors are utilized to record relevant data that is later analyzed on the computer. After repeated testing and identifying the cause of the arrhythmia, high-frequency energy or freezing methods are employed using an electrode catheter or balloon with a controllable temperature to burn or freeze the abnormal tissue that triggers the arrhythmia.

### **3. Success rate and complications of catheter ablation for arrhythmias**

The complete procedure takes approximately 2-4 hours, with a success rate of about 95% for treating supraventricular tachycardia. Although only a small percentage, approximately 2%, may experience recurrence after successful ablation, it remains a highly effective surgical treatment with low recurrence. However, as it is a cardiac catheterization procedure, risks cannot be completely eliminated even with careful and cautious operation by physicians and technicians. Statistics show that around 0.4% of patients require permanent pacemaker implantation due to atrioventricular node injury after ablation, with a complication rate of approximately 1% and a mortality rate of only about 0.1%.



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Additionally, for the treatment of complex arrhythmias, such as ventricular tachycardia and atrial fibrillation, about 3-5% of patients may experience minor to moderate strokes during the treatment process. There may also be a few cases of complications such as vascular injury at puncture site, hematoma, and embolism.

In summary, the need for this examination and ablation surgery is based on the patient's specific condition.

### **4. Indications:**

- 4.1 Patients whose arrhythmia does not respond to drug treatment.
- 4.2 Patients who experience intolerable side effects from antiarrhythmic drugs.
- 4.3 Patients who are not suitable for pacemaker implantation.
- 4.4 Young patients with life-threatening arrhythmias.
- 4.5 Pregnant women with a risk of deformed fetuses if antiarrhythmic drugs are taken.

### **5. Preparations before the examination:**

- 5.1 Follow your physician's instructions on stopping heart medications before the examination. Do not stop taking them without permission.
- 5.2 Your physician will explain the examination process, risks, and complications, and provide you're with a consent form to sign before proceeding. It's recommended that a family member accompanies you during the procedure for support.
- 5.3 To prevent nausea and vomiting during the examination, fast for 6-8 hours before the procedure, but you may still drink water and take medication as prescribed.
- 5.4 Shave the hair in the perineum and groin area to keep the area clean and sterile for the examination.



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### **6. Precautions after the examination:**

- 6.1 After ablation treatment, patients will return to the ward for observation of vital signs, and to monitor for any arrhythmias using an electrocardiogram.
- 6.2 Once back in the ward, patients can try drinking water and, if comfortable, can eat as well.
- 6.3 A sandbag will be used to compress the puncture site in the groin for several hours. It's essential to keep the same knee straight to prevent bleeding.
- 6.4 Patients should rest in bed for 4-6 hours. After six hours, the patients can sit up in bed depending on the condition of the wound.
- 6.5 It's important to pay attention to the wound's moisture level as dampness may indicate possible bleeding. Comparing the temperature and moisture of both feet can also help detect any circulation issues.
- 6.6 Family members can help to reduce discomfort by massaging and checking the muscles of the lower limbs every hour. This will also help with circulation as patients are required to lie flat and have pressure from the sandbag.

### **7. Precautions after discharge**

- 7.1 Occasionally, bruising or small lumps may appear at the site where the catheter was inserted, but these typically disappear within 3-4 weeks.
- 7.2 If you experience pain, fever, chills or notice a hematoma (swelling filled with blood) at the catheter insertion site, seek medical help immediately.
- 7.3 Avoid lifting heavy objects or engaging in strenuous exercise for the first seven days after returning home to allow your body to fully recover.
- 7.4 In the weeks following ablation, you may feel occasional palpitations lasting 2-3 heartbeats, which is common and will become less frequent



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over time.

- 7.5 If you experience persistent symptoms such as rapid heart rate, dizziness, chest pain, tightness, or shortness of breath persistent after ablation, seek medical help immediately.