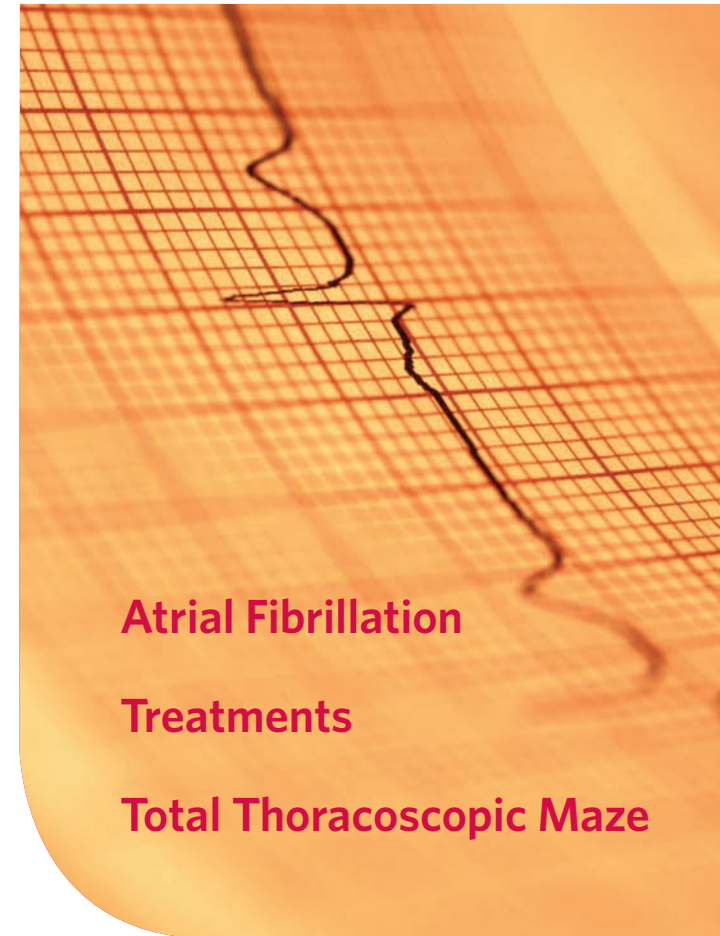




Atrial fibrillation is an abnormal rhythm of the heart, which can cause the heart to pump less effectively. According to the American Heart Association, it is the most common heart rhythm disorder, affecting more than 2.2 million Americans. Chronic atrial fibrillation can cause permanent changes in the heart, leading to heart failure and an increased risk of stroke.

Restoration of the heart's rhythm is the ultimate goal of atrial fibrillation treatment. The Ohio State University Medical Center is one of four centers in the United States performing a minimally invasive surgery to treat atrial fibrillation. The total thoracoscopic Maze is a closed-chest, beating-heart procedure that is performed without the use of the heart-lung bypass machine. The procedure has been shown to be 90 percent effective after one year in maintaining a normal heartbeat without the use of any anti-arrhythmic medications in patients with all types of atrial fibrillation.



Atrial Fibrillation

Treatments

Total Thoracoscopic Maze



*For more information
on the
total thoracoscopic maze,
please call
(614) 293-5502.*

The Total Thoracoscopic Maze

There are several different surgical procedures that can be used to treat atrial fibrillation, or a-fib. However, most of them involve an open-chest procedure. In recent years, innovative new minimally invasive approaches to treat a-fib have been developed. The total thoracoscopic Maze is performed through three or four tiny incisions on each side of the chest. In addition to being a more effective operation, patients experience less pain and have a quicker recovery time.

The Procedure

To perform the total thoracoscopic maze, small incisions, about one-quarter inch long, are made on each side of the chest. A fiber-optic camera and specialized tools are used to perform the entire procedure through these tiny incisions. The surgery is done without a large chest incision, without the heart-lung machine and without stopping the heart.

During the surgery, real-time mapping techniques are used to find the sources of atrial fibrillation in the patient's heart. The doctor uses this technology to identify, or map, the areas of the heart where the abnormal electrical signals originate. There are also nerve areas on the heart that can trigger the abnormal electrical impulses. All trigger areas, both nerve areas and mapped areas, are identified during the surgery and safely treated.

Each area that is identified and treated is then tested to ensure there is no conduction of electrical impulses across the treated tissue. This allows the doctors to ensure the treatments have been effective while the patient is still in the operating room. The procedure also involves closing a small area of the left atrium, called the left atrial appendage, where most blood clots form. This reduces the risk of stroke in patients with atrial fibrillation. The entire operation takes between two to four hours, patients

only spend one to two nights in the hospital and have minimal discomfort.

After surgery, blood-thinning medicine is continued in all patients for three months after surgery. It is then stopped in patients who remain in normal rhythm. For most patients rhythm-control medications are stopped after surgery. Rhythm-control medications can be used for three to four weeks after surgery in a small group of patients who continue to have a-fib. After the heart heals and inflammation affecting the heart's electrical system is gone, these patients discontinue medication.

All patients will also have remote heart rhythm monitoring at three, six and 12 months after surgery. This will ensure the heart continues to be in a normal rhythm and that it is safe to stop anti-arrhythmic or blood thinning medications.

The Benefits

Real-time mapping techniques used during the total thoracoscopic maze allow the surgeon to create a personalized treatment, targeting the areas of your heart causing the atrial fibrillation. Because these areas are mapped for each patient and it is done from the outside of the heart, there is no damage to the muscle or lining on the inside of the heart.

The surgery also reaches nerve areas not accessible during catheter ablations performed in cardiac catheterization laboratories. A recent study of 41 patients who had a minimally invasive maze procedure to treat atrial fibrillation showed that several nerve areas tested positive as possible triggers for the a-fib in all 41 patients.

Most patients remain in normal rhythm without rhythm-control medication after surgery. Because the procedure is minimally invasive, patients have a quicker recovery time and are able to resume normal activity soon after surgery.