

Robotic-Assisted Patent Foramen Ovale Repair



What is robotic-assisted patent foramen ovale repair?

A patent foramen ovale (PFO) is a small hole between the 2 upper chambers of the heart, the right and the left atrium. This hole is normal in the heart before birth, as part of the fetal circulation. But in most people, it closes soon after birth. If it doesn't close, you have a PFO. A robotic-assisted patent foramen ovale repair is a type of surgery to fix this hole in the heart.

Normally, a wall separates the right and left atria. No blood can flow between them. If a PFO exists, a little blood can flow between the atria.

A robotic-assisted patent foramen ovale repair is a type of minimally invasive surgery. Minimally invasive means that the surgery uses smaller cuts (incisions) than a traditional open heart surgery. Recovery may be easier and faster.

Along with smaller cuts, your surgeon uses a robotic instrument to help fix your PFO. The instrument has special tools attached to it. Your surgeon puts these tools and a camera through the small cuts. During the surgery, your surgeon sits at a nearby computer and controls the robot's movements. Your surgeon is able to see the surgery with a highly magnified image.

Surgeons do this surgery while you are asleep under general anesthesia.

Why might I need robotic-assisted patent foramen ovale repair?

Most PFOs do not cause any symptoms. In these cases, treatment is not needed. But sometimes PFOs can lead to complications. The most significant of these is stroke. This happens when a traveling blood clot blocks a blood vessel in the brain. Though PFOs do not cause most strokes, having a PFO may slightly raise the risk for stroke in some people.

If you have no risk factors for stroke or any history of traveling blood clots, you usually will not need treatment. But if you have had such problems, your healthcare provider may want to treat your PFO.

Treatment for PFOs varies. In some cases, your healthcare provider may still choose not to treat the PFO. Another choice is medicine that helps prevent blood clots, such as aspirin or warfarin. Sometimes your healthcare provider will suggest closing the PFO by using a catheter. Closing the PFO during traditional heart surgery is another possible choice.

Compared with a traditional surgical repair, a robotic-assisted, minimally invasive repair may ease your pain after surgery. It may also allow you to recover more quickly and decrease your risk for complications. In addition, it may give your surgeon more exact control compared with other types of minimally invasive PFO repair. Talk with your healthcare provider about what treatment is best for you.

What are the risks of robotic-assisted patent foramen ovale repair?

Complications are rare with robotic-assisted PFO repair. But sometimes they happen. Specific risks may vary based on your age, the size of your defect, and other health problems you may have. Possible risks include:

- Abnormal heart rhythms. These can rarely cause sudden death.
- Surgical patch becomes unattached
- Tear in the blood vessels around the heart
- Infection
- Excess bleeding
- Puncturing the heart (rare)

There is also a risk that the procedure will not successfully fix the PFO. Talk with your healthcare provider about your specific risks.

How do I get ready for robotic-assisted patent foramen ovale repair?

Talk with your healthcare provider about how to get ready for your surgery. If you smoke, try to stop smoking beforehand. It may lower your risk for complications. Tell your healthcare provider about all medicines you take, including over-the-counter medicines and any vitamins or herbal supplements. Ask whether you need to stop taking any medicine beforehand. Follow your healthcare provider's instructions about not eating or drinking anything for the specific time before your surgery.

You may need some routine tests before the procedure. These may include:

- Chest X-ray, to check your lungs
- Electrocardiogram (ECG), to check your heart rhythm
- Basic blood tests, to check your general health
- Cardiac catheterization, to look for blockages in the coronary arteries
- Echocardiogram, to evaluate your PFO

What happens during robotic-assisted patent foramen ovale repair?

Check with your healthcare provider about the details of your surgery. In general, you can expect the following:

- Before the surgery starts, you'll get general anesthesia. It will help you sleep deeply and painlessly through the operation. Afterward, you won't remember it.
- During the operation, surgery staff will closely watch your vital signs. That includes your heart rate, blood pressure, breathing, and oxygen levels.
- Before and after the surgery, you may get antibiotics to help prevent infection.
- You may be attached to a heart-lung machine. This machine acts as your heart and lungs during the surgery.
- Your surgeon will make some small incisions in the spaces between your ribs.
- Your surgeon will insert several precision-guided robotic arms into these incisions. These arms hold and manipulate tiny instruments to do the required tasks. A tiny video camera will also be inserted to provide a magnified, 3-D image of the operating site.
- The surgeon will control the robotic arms and camera from a console located within the operating room.
- Your surgeon will look at continuous images from the robotic camera during this surgery.
- Your surgeon will fix the small hole between the upper heart chambers. A small surgical patch may be used to close the hole.
- Once the repair is done, the robotic tools, camera, and heart-lung machine will be removed.
- The small incisions on your chest will be closed. A bandage will be applied.

What happens after a robotic-assisted patent foramen ovale repair?

After your robotic-assisted PFO repair, you will begin your recovery in the intensive care unit or a recovery room. When you first wake up, you might feel confused. You will be hooked up to several machines to keep track of your vital signs more easily. You might also have a tube down your throat to help you breathe.

You should expect a little pain after your surgery. But it shouldn't be severe. You can have pain medicine if you need it. You can have normal foods once the breathing tube is removed and as soon as you can tolerate them. You will likely need to stay in the hospital for a few days.

It is important to make sure someone drives you home from the hospital. You may also need some extra help at home for a little while.

A small amount of fluid draining from your incisions is normal. Tell your healthcare provider if you have a lot of drainage, redness, or a fever. Also let your healthcare provider know right away if you have severe symptoms like sudden shortness of breath. You may have your stitches removed at a later appointment. Your healthcare provider will carefully watch you to make sure your surgery was successful.

You should need less recovery time than you would have from a standard PFO repair. But you still may tire easily for a while after your surgery. Get more active as soon as your healthcare provider says it is OK. Don't lift anything heavy for several weeks. Talk with your provider about what is safe for you to lift. Also follow all your provider's instructions about medicine, exercise, diet, and wound care. It will help your recovery.

Sometime after your surgery, your healthcare provider may want to follow up with an echocardiogram with bubble study. This test can help make sure that you no longer have a hole in your heart.

Talk with your healthcare provider about what medicines you need to take. For a short time you may need to take medicines to prevent blood clots. Make sure all your healthcare providers and dentists know about your health history. You may need to take antibiotics for a while before some dental procedures. This helps prevent an infection of the heart. Talk with your provider about whether this applies to you.

Next steps

Before you agree to the test or procedure, make sure you know:

- The name of the test or procedure
- The reason you are having the test or procedure
- What results to expect and what they mean
- The risks and benefits of the test or procedure
- What the possible side effects or complications are
- When and where you are to have the test or procedure
- Who will do the test or procedure and what that person's qualifications are
- What would happen if you did not have the test or procedure
- Any alternative tests or procedures to think about
- When and how you will get the results
- Who to call after the test or procedure if you have questions or problems
- How much you will have to pay for the test or procedure

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