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**PHILLIP ROWSE:** There are a variety of ways to repair a mitral valve. The conventional approach is to go through the sternum, which is kind of the standard operation. Here, at Mayo Clinic, since 2008, we've approached the mitral valve through the use of the robot.

With the use of robotic instruments and arms, which really are an extension of the surgeon's fingers, we can perform very delicate intracardiac mitral valve repair or other valve repair. We could close defects in the heart. We can treat arrhythmias. And it really is an amazing feat.

**ARMAN ARGHAMI:** I love to be able to do the same technique, the same good long-term result repair that we have tested and done in the open technique and now be able to do it through a small incision and benefit the patient for a faster recovery.

**MACKRAM ELEID:** We have developed new technologies that allow us to do things with smaller catheters. We also have a lot of other tools that we can use to repair valves. One of which is what we call an edge-to-edge repair, which involves placing a device on the leaflets of the valve that is leaking. And we can oppose those leaflets with a device that brings the leaflets together. Almost like a clothespin.

The MitraClip becomes part of the heart because-- it's a metal clip, but it's coated with fabric and that allows the body's tissues to coat it and grow over it over a period of a few months. And we're also continually improving our ability to see what we're doing inside the heart with imaging tools.

**HECTOR MICHELENA:** There is imaging echocardiography, computed tomography, magnetic resonance. And we have top-notch experts looking at those images.

**PHILLIP ROWSE:** We do redo operations just about every day of the week and are very comfortable in offering repeat surgeries for patients with multi valve disease.

**MACKRAM ELEID:** Re-operation at many places is a high-risk undertaking. But at Mayo Clinic, we do a lot of re-operations so our surgeons are very familiar with that and can do that expertly. And in patients who our surgeons feel are too high risk for a re-operation, we have other transcatheter techniques that can similarly treat a problem. And having more devices, more treatment options available opens up more options and ways for us to try to innovate for challenging problems.

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