

Study reveals important clues about rare heart condition that strikes young, healthy women

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Spontaneous coronary artery dissection (SCAD), a tear of the layers of the artery wall that can block normal blood flow into and around the heart, is a relatively rare and poorly understood condition. It often strikes young, otherwise healthy people -- mostly women -- and can lead to significant heart damage, even sudden death. Now, in the first study of its kind of such patients, Mayo Clinic researchers have started to uncover important clues about SCAD, including its potential risk factors, optimal treatment approaches and short- and long-term cardiovascular outcomes, including a higher-than-expected rate of recurrence. They also found a surprising link to fibromuscular dysplasia, another rare condition that causes a narrowing in some arteries.

Researchers hope the findings, published online in *Circulation* on Monday, July 16, will help physicians better identify and treat SCAD and understand the need for routine monitoring of these patients. To date, clinicians have mostly relied on case reports, but thanks to this study and a patient-driven effort to find answers, the research is advancing quickly.

"SCAD is not related to [plaque buildup](#) that more commonly causes coronary [blockages](#); it's a completely different disease process. These patients are typically young, fit and healthy and they are blown away by a totally unexpected [heart attack](#)," says Rajiv Gulati, M.D., Ph.D., a cardiovascular interventionalist at Mayo Clinic. "This research helps us

to define this condition, and it gives us important information about the natural history of the disease."

Mayo researchers now believe the condition may be more common than initially thought. Marysia Tweet, M.D., Mayo Clinic cardiology fellow, says they now suspect many [heart](#) attacks caused by SCAD have been mislabeled as cholesterol blockages.

Researchers retrospectively evaluated the incidence, clinical characteristics, treatments, in-hospital outcomes and long-term risk of SCAD recurrence or major adverse [cardiac events](#) in 87 patients with confirmed SCAD. Patients were studied for a median of four years.

Consistent with previous data, patients with SCAD are relatively young (42.6 years old on average) and the vast majority are women (82 percent). Researchers also found:

- SCAD occurs most frequently in men during extreme exertion. Among women, it was most common in the three months after having a baby.
- Roughly half of the patients came to the hospital with a life-threatening heart attack.
- An unexpected link between SCAD and fibromuscular [dysplasia](#), both of which disproportionately affect women, suggests common underlying disease processes that need further study.
- SCAD recurred in 17 percent of patients during the study period -- all of them female.
- Unlike typical heart attacks, conservative therapies without stent placement or bypass surgery may be a better approach for some SCAD patients. Invasive procedures such as angioplasty and stenting were associated with a higher-than-expected rate of complications, suggesting these should be reserved for unstable

patients.

Coronary artery problems are usually detected by an angiogram. But SCAD might not be visible on an angiogram because, although the test will clearly identify a narrowing or blockage in the artery, it does not allow physicians to see the actual vessel walls or their structure. "For this reason, it can be easy to wrongly attribute this narrowing to cholesterol buildup because, of course, that's still the most common cause of heart attack," Dr. Gulati says. "Fortunately, newer imaging tools in the catheterization lab are allowing us to distinguish between plaque build-up and dissection or the disruption of the vessel wall itself.

SCAD patients and Mayo researchers have worked together to use social media to recruit SCAD patients for studies. The collaboration has led to other studies at Mayo and to creation of a virtual multicenter registry and DNA biobank of samples from SCAD patients and family members.

"The success of our ongoing research can be directly attributed to the SCAD patients themselves," says Sharonne Hayes, M.D., cardiologist and founder of the Mayo Women's Heart Clinic. "We've been amazed not only at the support they have provided to each other, but also by their unwavering commitment to do all they can to advance the science and make sure that future SCAD patients are better informed, better cared for, and fewer in number."

Provided by Mayo Clinic

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