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DAMIAN RASCH, D.O.

ENCINITAS · LA JOLLA, CALIFORNIA



Myocardial Bridging

A heart artery that tunnels through the muscle. It is usually a harmless finding you live with your whole life.

Around 58%
of people show a bridge on a detailed heart CT scan, more than half

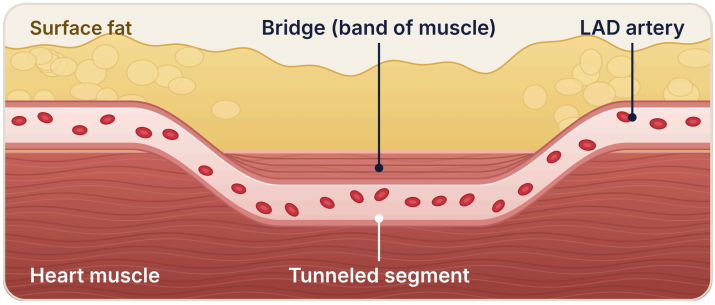
70 to 98%
of bridges involve the LAD, the artery running down the front of the heart

About 85%
of the heart's own blood flow arrives between beats, while it relaxes

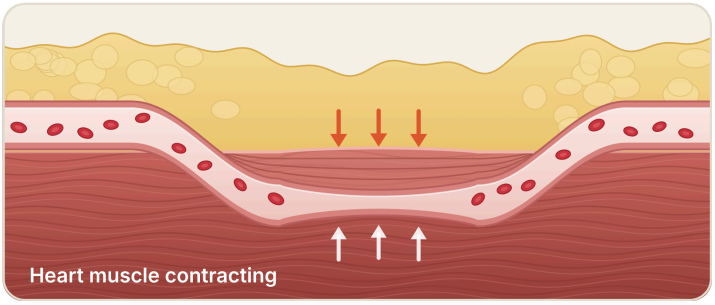
WHAT IT IS

An artery that dives into the muscle

Between beats, the artery is open



With each beat, the bridge squeezes it



Coronary arteries normally run along the heart's outer surface, in a thin layer of fat. With a myocardial bridge, a short segment dives into the heart muscle for a stretch before surfacing again. You are born with it. A bridge is not a blockage. The artery itself is wide open and healthy, and the muscle around it squeezes it during part of each heartbeat.

WHY SOME BRIDGES CAUSE SYMPTOMS

Depth, length and heart rate

Depth
Superficial is 1 to 2 mm deep, deep is more than 2 mm and very deep is 5 mm or more. The deeper the tunnel, the more muscle there is to squeeze it.

Length
A long bridge, generally 25 mm or more, affects a longer stretch of artery and tends to cause more trouble.

A faster heart rate
Exercise, stress, caffeine and a racing pulse tend to bring out symptoms. A faster rate shortens the time between beats that a bridge steals from.

The heart fills its own arteries mostly between beats. A shallow, short bridge springs back open in time, but with a deeper bridge the pinch can carry into that window. Symptoms include chest pressure or tightness, breathlessness, reduced exercise tolerance and sometimes palpitations. **Call 911** for chest pain at rest, lasting over about 5 minutes or not easing with rest, or with fainting, sweating or breathlessness.

A common variation

For the large majority of people, a myocardial bridge is a normal variation in how the heart was built. It deserves a clear explanation, and it is rarely a reason to be afraid.

IF A BRIDGE CAUSES SYMPTOMS

Testing, then a step-by-step plan

IS THE BRIDGE TO BLAME?

symptoms alone can't tell

CT angiography	A detailed CT scan of the heart arteries. It shows the bridge best, including how deep the artery dives and how long the tunnel runs.
Catheterization	Dye and X-ray show the classic "milking" effect, the tunneled segment narrowing with each squeeze and opening back up between beats.
Tests inside the artery	At centers with specific expertise, a pressure wire takes a reading in the relaxation phase (diastolic FFR), often with dobutamine to mimic exercise. A value at or below 0.76 points to a bridge that limits flow. It is reserved for cases where the answer would change the plan.

MEDICINE COMES FIRST

for many, all they need

Beta-blockers	These are the first-line treatment. They slow the heart rate, which lengthens the relaxation phase between beats, and they soften the squeeze by reducing how forcefully the heart contracts.
Calcium channel blockers	The main alternative or add-on, and a good choice if you can't tolerate a beta-blocker. Especially useful when the artery also tends to go into spasm.
Ivabradine	A second-line, off-label option for people who need their heart rate slowed but can't take beta-blockers or calcium channel blockers.

AVOIDED WITH A BRIDGE

Nitroglycerin and nitrates	They relieve typical angina but tend to make bridge symptoms worse, by widening the artery above and below the bridge and sharpening the squeeze in the tunneled segment.
Stenting	Generally not advised. A stent in a segment squeezed with every heartbeat leads to high rates of stent fracture, re-narrowing and even artery rupture.

SURGERY, FOR THE FEW

still symptomatic on full medical therapy

Surgical unroofing (myotomy)	The preferred procedure when one is needed, in which the surgeon divides the band of muscle over the artery. It works best for shorter, more superficial bridges. Up to 60% of adults may have some chest pain return by three years.
Or bypass surgery	Considered for very long bridges, over 25 mm, or very deep ones, 5 mm or more, where unroofing would be difficult. Grafts compete with the open artery and often fail. In one study only about 10% of artery grafts stayed open at 18 months, against around 80% of vein grafts.

THE LONG-TERM OUTLOOK

A 2026 analysis of 22 studies and nearly 38,000 people linked bridging with roughly double the relative risk of cardiac events, but not with a higher risk of death. The risk clustered in people with thickened heart muscle or high-risk coronary disease.

READ THE FULL ARTICLE

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myocardial-bridging

For education only, and not a substitute for advice from your own physician. Sources include the JACC reviews by Sternheim (2021) and Tarantini (2016), the 2021 ACC/AHA/SCAI revascularization guideline, a 2026 European Heart Journal review, the Alam meta-analysis (2026) and CORE320 (2023).

DR. DAMIAN RASCH, D.O. · BOARD-CERTIFIED INVASIVE CARDIOLOGIST · ENCINITAS AND LA JOLLA, CA

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