

No More Knife Guys

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Too many heart patients are on a conveyor belt to the OR—but there's a better way to heal



At the age of 45, Ken Goldwyn learned that three of his coronary arteries were partly blocked. As Goldwyn lay on a gurney in a crowded hospital hallway in Boston following an angiogram, his cardiologist delivered a terse judgment: "You will require a triple bypass surgery—and you will require it within the next three weeks."

Goldwyn panicked. Though a smoker, he felt fine, apart from an occasional sore throat, the original reason he'd gone to the doctor. And now, suddenly, it was open-heart surgery—or else. His wife, Sheree, broke down in tears. But his mother, Shirley Aronson, made a call to her cardiologist, Thomas Graboys, M.D., associate clinical professor of medicine at Harvard Medical School. She asked if he'd be willing to offer a second opinion.

Three days later, Goldwyn visited the Lown Cardiovascular Center, where Graboys is director of the research foundation. Goldwyn's surgery had already been scheduled for the following week, and he was so sure that Graboys was going to advise him to go ahead with it that he told his wife not to skip work to come to the appointment. He'd rather have her take a day off when he had the operation.

But after examining Goldwyn and reviewing his test results, Graboys was surprisingly reassuring. He explained that Goldwyn's sore throat, which came with exertion and subsided when he rested, was probably due to his narrowed arteries, as his previous cardiologist had said. Even so, the illness might well be manageable without surgery. The doctor told Goldwyn to stop smoking immediately, walk a little each day, start taking medication to lower his blood pressure, and come back in two weeks for a stress test to gauge his heart's performance during exercise.

Goldwyn canceled his bypass appointment. And at his second visit with Graboys he heard the news he'd been hoping for: in the doctor's opinion Goldwyn did not need surgery. He was a good candidate for a conservative treatment plan involving medication and lifestyle changes.

Goldwyn, now 51, hasn't been back to the hospital for his heart since that anxiety-inducing experience six years ago. Although he knows he probably still has significant blockages in his coronary arteries, he hasn't suffered the heart attack his first cardiologist implied was around the corner. And thanks in part to a daily walking regimen, his treadmill time on his last stress test placed him in the top 20 percent of healthy people 10 years younger than he is.

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Most U.S. heart doctors would say he's been lucky. But Goldwyn and his doctor credit his survival to careful strategy. Graboys is one of the most zealous proponents of a philosophy that many cardiologists are slowly coming to embrace: when it comes to heart surgery, sometimes less is more.

It's a major shift. American doctors have long believed that blocked arteries should be unblocked or bypassed—treatments that can indeed have major benefits. There's no doubt that eliminating or bypassing blockages can relieve angina, the chest pain or tightness that occurs when the heart is deprived of oxygen. For a patient in the throes of a heart attack, emergency angioplasty (the insertion of a balloon into the artery to compress plaque) is the best way to minimize heart damage.

Yet neither bypass (in which a healthy blood vessel is grafted around the blockage) nor angioplasty has been shown to prevent heart attacks. Bypass surgery makes it less likely that a heart attack will prove fatal—but only in patients with the most severe disease (for example, those with a blockage in the left

main coronary artery, which supplies a large portion of the heart with blood). For patients with less-severe disease, bypass has never been found to enhance survival compared with nonsurgical treatments. As for angioplasty, William Boden, M.D., professor of medicine at the University of Connecticut School of Medicine, says, "There are no studies—none, zero—to date that have demonstrated that it improves survival compared to medication."

Proponents of the less-is-more philosophy don't dispute that some high-risk patients benefit from more aggressive treatment. The problem, they say, is that this approach is also used in low-risk patients who would do very well with nonsurgical therapies. "We are very aggressive when we think a patient needs angioplasty or bypass surgery," says Graboyes, "but the vast majority of folks undergoing interventional procedures in the United States don't really need them."

The numbers support his concern. The U.S. is home to only 5 percent of the world's population but performs almost half of the invasive coronary procedures (angioplasties and bypass surgeries) worldwide. Angioplasty is generally a last resort for high-risk patients in Canada and Europe, but in the U.S. it's frequently step one, says Boden. One noted U.S. cardiologist says that 25 percent of angioplasties in this country are unnecessary.

So why do U.S. doctors take such an aggressive approach? Profit may play a role: most U.S. physicians, hospitals, and health-care facilities are paid more when they do more. Lawsuits are another factor. American cardiologists may face legal action if they don't recommend the most aggressive treatment available. Perhaps the main factor, however, is the thoroughly American conviction that anything you can do you should do. "In the U.S.," says Boden, "there is the belief that 'more aggressive' is synonymous with 'better outcomes.' "

That philosophy is slowly changing, thanks to a radical new understanding of how heart attacks occur. A heart attack happens when a coronary artery becomes blocked. But 20 years' worth of research shows that most heart attacks are caused not by gradual plaque buildup but by plaque that bursts open, triggering a blood clot.

It is this clot, rather than the plaque, that clogs and shuts the artery. And it's not the size of a plaque that makes it dangerous but its composition, explains cardiologist Prediman K. Shah, M.D., director of cardiology and of the Atherosclerosis Research Center at Cedars-Sinai Medical Center in Los Angeles. Inflamed, fat-filled plaques covered by a thin cap are the ones most vulnerable to rupture. These plaques tend to burrow into the artery wall rather than expand into the blood vessel opening. Studies of patients with coronary artery disease show that the rupture of these seemingly inconsequential plaques is the trigger for at least 75 percent of heart attacks.

Given these findings, a growing number of heart experts believe that the best way to prevent heart attacks is not through interventions that target one or even several narrowed arteries but by using therapies that make plaques less likely to burst. What patients need to know, says Boden, is that atherosclerosis—the thickening and hardening of the arteries—doesn't affect just the 15-millimeter segment of artery that your doctor may bypass or reopen through angioplasty. It is a disease that affects your whole body, so the whole body needs to be treated.

Shah maintains that a comprehensive, noninvasive approach can reduce heart attack risk by as much as 80 percent. His recommendation begins with different categories of medications— aspirin, blood-pressure-lowering drugs (ACE inhibitors and beta-blockers), and cholesterol-modifying medications (statins to lower harmful LDL and niacin to raise beneficial HDL). Each of these medicines tackles problems that are known to increase heart-attack risk, from inflammation and overactive blood clotting to stiffening of blood vessel walls and the buildup of plaque.

The second component of a heart-healthy lifestyle is diet: "We know that a Mediterranean-style diet, which is low in saturated fat and rich in omega-3 fatty acids from fish, can be a powerful intervention," says Shah.

Third is exercise, which increases the efficiency of the heart, lowers blood pressure, raises levels of protective HDL cholesterol, and accelerates the formation of collaterals—tiny blood vessels that reroute blood flow around arteries narrowed by plaque buildup. And yet because of what Cleveland Clinic cardiologist Steven Nissen, M.D., calls the prevailing "fireman mentality," these noninvasive therapies are

frequently not offered to patients who have already undergone surgery for their condition. In a 2003 study of patients age 65 and older who were hospitalized after a heart attack, those who underwent bypass surgery were significantly less likely than nonsurgical patients to receive prescriptions for drugs that are proven to reduce the risk of a second heart attack.

The University of Connecticut's Boden is the chairman of COURAGE, a seven-year study that he hopes will finally answer this crucial question: does angioplasty reduce the risk of heart attack and death in patients who are already taking all of the recommended drugs? Although no study to date has shown that it does, says Boden, the bias in favor of angioplasty is so strong among American cardiologists that he had difficulty recruiting patients through private-sector physicians. "They felt it was unethical to, in their words, 'put patients in harm's way,' " says Boden.

Five years deep into the trial, those concerns seem unwarranted. The safety of COURAGE has been closely monitored by a nine-member panel since the study began, and they have seen no evidence that patients getting medical therapy are at greater risk.

In fact, there may actually be the potential for more complications in the angioplasty group. For angioplasty the in-hospital death rate is about 1 percent, and a small percentage of patients suffer a heart attack during the procedure. A much more common problem is restenosis, a blockage in the treated artery that can send up to 40 percent of patients back to the hospital for a repeat procedure. Patients undergoing bypass surgery have a 2.4 percent risk of dying in the hospital and a 5 percent chance of suffering a heart attack or stroke during the procedure. There is also a considerable risk of lingering memory loss or mental impairment afterward, especially in those 70 and older.

This is not to suggest that everyone with heart disease is better off substituting a low-fat diet for surgery. "There is such a lot of evidence that certain severe forms of critical coronary artery disease are life-threatening," says Gary S. Roubin, M.D., Ph.D., chairman of the Department of Interventional Cardiology at New York City's Lenox Hill Hospital. "If you identify this extent of disease, you are going to intervene." Even in the absence of life-threatening disease, says the Cleveland Clinic's Nissen, an intervention may be appropriate to relieve angina. But if the heart is strong and there is no evidence of impaired blood flow to a large region of the heart, the patient's own preferences should weigh heavily in that decision.

So how do you know if you need the surgery your doc is recommending? Graboys of Harvard Medical School suggests a three-step formula to determine whether patients can safely follow the nonsurgical route.

"Number one is the state of your pump," he says. "If you have a good heart muscle, then you're going to do well." Cardiac ultrasound, also called echocardiography, is a simple, noninvasive way to evaluate the heart's pumping strength.

The second criterion, says Graboys, is the heart's electrical stability, especially under stress. "If you put someone on a treadmill, do they develop changes in the heart rhythm?" A steady rhythm argues against surgery.

The third factor is the presence or absence of symptoms such as pain or shortness of breath. "If the patient has no symptoms and you intervene," says Graboys, "only one of two things can happen: he stays the same or he gets worse. You can't make him better." Given the current debate among cardiologists, getting a second opinion is the wisest course of action. Goldwyn, who chose not to have bypass surgery in 1998, is glad he did. "If the most I've done is buy myself 10 years, that's something major unto itself," he says. "But I actually seem to be improving."

That shouldn't be a surprise, says Boden. "No therapeutic approach is completely infallible, and neither surgery nor medical therapy provides a universal warranty of longevity. But a lot of heart patients have more life in them than we've led them to believe."

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