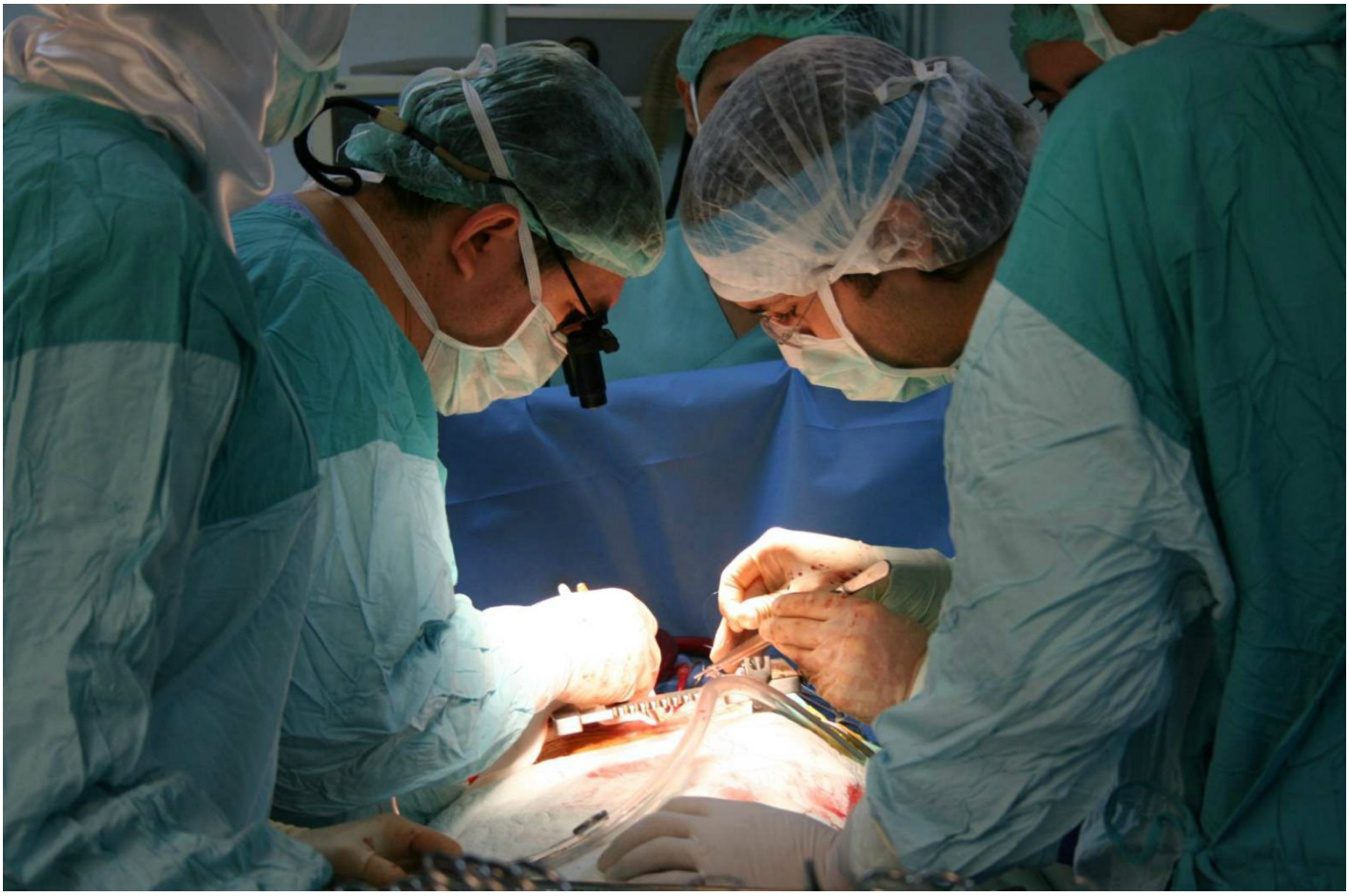
ClearGlide Eases Vessel Harvesting For Coronary Bypass Surgery

Emory University



Sixteen years ago, Alan Lumsden, M.D., FACS, was a heart surgeon and professor at Emory University, and he was troubled. A small but necessary step in preparing for coronary bypass surgery was causing disproportionate problems for his patients.

"In bypass surgery, we overwhelmingly use veins from the leg," says Lumsden, now at Methodist DeBakey Heart and Vascular Center, Methodist Hospital, Houston. "Harvesting the leg vein required an open incision anywhere from the ankle to the groin," he says. "

> *Many patients complained more about the leg incision than about having their chests cracked, and it was a source of potential infection and complications.*
>
> Alan Lumsden

The problem was enormous. According to the Centers for Disease Control, 415,000 times a year surgeons open the chests of patients stricken with coronary artery disease to "plumb around" a restriction in a coronary artery by grafting a healthy blood vessel from elsewhere in the body. As many as four narrowed coronary arteries may be bypassed in

one coronary artery bypass grafting (CABG, pronounced cabbage) procedure.

But in order for a surgeon to perform a CABG, he or she needs a healthy blood vessel harvested from elsewhere in the patient. And therein lies the rub: How to harvest that vessel while minimizing discomfort and complications.

The Spark of an Idea

There had to be a better way, Lumsden thought. Then he attended the Georgia Surgical Symposium at Sea Island Georgia where Felmont Eaves, M.D., showed a minimally invasive technique for harvesting muscle flaps for plastic surgery. "I'm a great believer in looking in the other guy's toolkit, and the instruments they developed looked like they could be modified for saphenous vein harvesting," Lumsden says, "so we talked about it and actually used those instruments to take out a shorter piece of vein."

Lumsden says, "I contacted Ethicon Endo-Surgery, a company devoted to providing surgeons with products that assist in minimally invasive surgery, talked to them about this concept, and began a series of iterations with their engineers that lead to the development of the ClearGlide system for harvesting vessels for CABG surgery. Emory University already had a collaboration agreement with Ethicon, so that made it easier. It was a tremendous advantage to have an industry partner who could prototype a device that was custom made for the purpose."

The result was a huge improvement over the old method of vessel harvesting. The ClearGlide system requires a single small incision. The vessel harvesting instrument is then inserted into the incision around the vessel. The instrument slides down the outside of the vessel to the required length, the vessel is snipped off, and the vessel can be withdrawn from the leg, ready for use by the CABG surgeon.

The result revolutionized the harvesting of vessels for bypass surgery. "There is less pain, less swelling, fewer complications, dramatically reduced infection rates, smaller scars, and improved patient outcomes and satisfaction," Lumsden says. "It's pretty much the national standard for harvesting these veins."

Licensing the ClearGlide Technology

"We executed an initial licensing agreement with Ethicon for the vessel harvesting technology invented during the Ethicon collaboration," says Susanne Hollinger, director of License and Patent Strategy, Office of Technology Transfer, Emory University.

"That was completed in 1994," she says, "and resulted in royalties of some $1.1 million until 2005. After corporate acquisitions required divesting the vessel harvesting technology, it was transferred to Datascope in 2006 and in 2009 to Sorin Group who enhanced and renamed it VascuClear."

Hollinger adds, "Since 2005, the royalties Emory has received from the ClearGlide/VascuClear licensing amount to an additional $1.2 million, and we will be receiving revenue for a few more years."

The Impact of the Technology

Leslie Snow, vice president of U.S. Marketing for Sorin Cardiac Surgery Business Unit, Sorin Group, says, "We acquired this technology because it is a fantastic method to get a conduit — the vessel — needed for bypass surgery."

She adds, "Our business is focused on the cardiac suite in three main areas of expertise: heart valve, cardiopulmonary and cardiac rhythm management. As the industry moves toward less invasive procedures, this technology is a good fit for us. When we purchased the technology from Datascope, we made some changes to make it more user friendly for customers, and those changes have been well-received. We're one of the top three companies in this marketplace."

Snow notes that VascuClear fits well with broad trends in the health care industry. “With an emphasis on quality in health care reform, hospitals won’t get paid for readmissions after surgery; they are incentivized to reduce problems after surgery. VascuClear helps to do that for coronary bypass surgery.”

She concludes, “This technology is good for our company, good for patients, and good for health care providers.”

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