

State-of-the-Art Coronary Artery Bypass Graft

Publication Summary Document

John D. Puskas, MD (Moderator), Harold L. Lazar, MD, Michael J. Mack, MD, Joseph F. Sabik III, MD, and David Paul Taggart, MD

Background

The American Association for Thoracic Surgery is organizing open discussions in cardiothoracic treatment and care. This time the focus was on the State of the art in coronary bypass grafting.

Content

Important issues to be discussed was bilateral internal thoracic artery grafts, stroke prevention and no-touch, saphenous vein grafts, graft indications, vein graft patency, off-pump surgery, minimally invasive coronary artery bypass, hybrid procedures, graft assessment and robotic procedures.

Important Quotes

Stroke prevention: There is absolutely no excuse why every patient shouldn't have epiaortic scanning (Dr. Mack)

The greatest mistake we OPCAB enthusiasts have made was for a decade to put a partial occlusion clamp on a pulsatile aorta and to think that was somehow minimally invasive (Dr. Puskas)

Epiaortic scanning is very important in preventing embolization (Dr. Sabik)

Off-pump surgery: There is currently no evidence to show that OPCAB, MIDCAB, or hybrid procedures result in any superior outcomes compared to on-pump procedures (Dr. Lazar)

For patients at low risk for cardiopulmonary bypass, there is no survival benefit with off- pump bypass (Dr. Puskas)

The problem is I think there are a small minority of patients who really do benefit from off-pump surgery (Dr. Taggart)

Internal thoracic artery grafts: The most important thing we do as heart surgeons and as coronary surgeons is placing the LIMA to the LAD (Dr. Sabik)

The recommendation that many of us have signed onto is that 70% stenosis is reasonable to graft the vessel. There is little data to support this (Dr. Sabik)

Graft patency: There's no question that all graft patency, especially vein graft patency, will be improved if these patients are kept on aggressive statin regimens (Dr. Lazar)

The concerns about graft patency and completeness of revascularization in inexperienced hands are real (Dr. Puskas)

I think as a standard of care, every patient should have measurement of the IMA to LAD flow and check that anastomosis, because it's the one thing in all of coronary revascularization that changes a patient's life expectancy (Dr. Taggart)

Medistim Comments

During the state-of-the art discussion, Dr. Taggart also made the following comment:

“We use it (TTFM) routinely in our practice now. About 5, 6 years ago we published 2 articles in JTCVS saying that there was a problem with TTFM measurements, and the problem was that in 90% of patients you get great results; large flows, low pulsatility index, and you knew your graft was fine. Our problem was in about 10% of grafts we had ambivalent flows, so flows of maybe 15-20mL with slightly high pulsatility indices. And then you had to decide, do I revise this graft or not, even when you felt that you had done the graft properly. And the problem has now been effectively solved by Medistim, because with their new VeriQ system, you actually get an epicardial echocardiography. So it’s a little probe that you put on the anastomosis and you can look clearly at the anastomosis and you can see it’s widely patent with flow in and out of it. So that immediately means you do not need to revise this graft. So I think they have solved the problem”

The recommendation given by Dr. David Taggart regarding graft patency, points to the importance of combining both epicardial imaging and TTFM for a complete intraoperative quality assessment of the graft and the anastomosis. The VeriQ C™ system provides the state-of-the-art technology device to accommodate these recommendations.

Reference

Seminars in Thoracic and Cardiovascular Surgery, Volume 26, Number 1

[http://www.semthorcardiovascsurg.com/article/S1043-0679\(14\)00040-9/abstract](http://www.semthorcardiovascsurg.com/article/S1043-0679(14)00040-9/abstract)