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Anastomosis Of Radial Artery To Left Internal Thoracic Artery For Minimally Invasive Anaortic Coronary Artery Bypass

Ilhan Mavioglu, MD. Istanbul, Turkey.

BACKGROUND

With the introduction of anaortic bypass into routine practice, the risk of stroke has been dropped to almost zero. Additionally, total arterial revascularization improved long term freedom from major adverse cardiac and cerebrovascular events, death, and MI.

ADULT: CORONARY

Implementation of the aortic no-touch technique to reduce stroke after off-pump coronary surgery

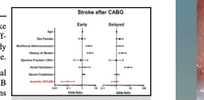
Check for updates

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Perspective

Because the anaortic off-pump coronary artery bypass grafting technique is shown to be suitable for the whole risk spectrum of coronary surgery patients and to approximate the early stroke risk toward 0.1%, it should be considered as a routine approach. Although the quest for prevention of early strokes seems to be solved, future research should focus on the reduction of delayed strokes.

relationship between stroke of the aortic no-touch off- understood. The present study ence and time point of stroke. patients underwent surgical After establishing anOPCAB ry by 18 different surgeons all patients with cardiogenic ev hveass eraftine. 13,279



Risk factors for early and delayed stroke after coronary artery bypass grafting.

Research

JAMA Cardiology | Original Investigation

Long-term Outcomes Associated With Total Arterial Revascularization vs Non–Total Arterial Revascularization

Rodolfo V. Rocha, MD; Derrick Y. Tam, MD; Reena Karkhanis, MBBS; Xuesong Wang, MSc; Peter C. Austin, PhD; Dennis T. Ko, MD, MSc; Mario Gaudino, MD; Alistair Royse, MD; Stephen E. Fremes, MSc, MD, FRCSC

Supplemental content

IMPORTANCE The optimal conduits for coronary artery bypass grafting (CABG) remain controversial in multivessel coronary artery disease.

CONCLUSIONS AND RELEVANCE Total arterial revascularization was associated with improved long-term freedom from major adverse cardiac and cerebrovascular events, death, and myocardial infarction and may be the procedure of choice for patients with reasonable life expectancy requiring CABG.

JAMA Cardiol. 2020;5(5):507-514. doi:10.1001/jamacardio.2019.6104
Published online February 19, 2020.

Total-arterial, anaortic, off-pump coronary artery surgery: Why, when, and how

Check for updates

Michael P. Vallely, MBBS, PhD, FRACS,[a] Michael Seco, BMedSc, MBBS, PhD,[b] Fabio Ramponi, MD, FEBVS,[c] and John D. Puskas, MD, FACS[d]

Video clip is available online.

"We choose to go to the moon in this decade and do the other things. Not because they are easy, but because they are hard."
—John F. Kennedy.


Complete revascularization with arterial conduits, 2 inflows, and no aortic manipulation.

WHY

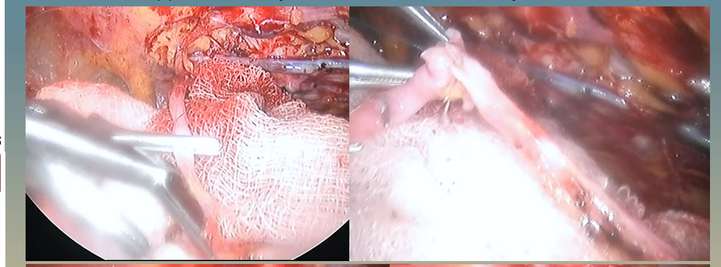
Ischemic heart disease remains the leading cause of death worldwide.[1] Coronary artery bypass grafting (CABG) has consistently been shown to be the best treatment for patients with complex left main and multivessel disease.[2] However, coronary surgery for many surgeons, and many surgical units, remains a "commodity" item with little change in the procedure for more than 40 years. This is despite strong evidence for the use of more advanced

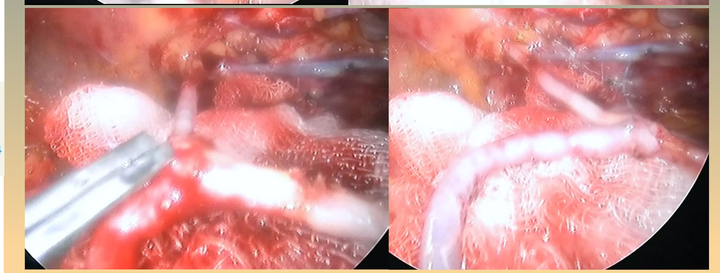
CENTRAL MESSAGE

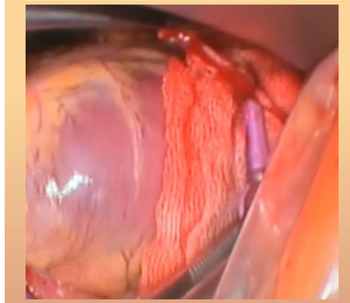
Total-arterial, anaortic, off-pump surgery with complete revascularization offers reduced neurologic injury by avoiding aortic manipulation and increased survival associated with arterial grafts.

METHODS

For minimally invasive anaortic coronary artery bypass (MACAB), the radial artery graft is anastomosed to the left internal thoracic artery (LITA) located in situ as a "y" graft at an appropriate angle depending on the condition of the target vessels.
For this "y" anastomosis to be made to the LITA in situ, wet gauze is wrapped around the coronary stabilizer and placed under the LITA, and light traction is applied laterally towards the thoracotomy incision.







After the anastomosis, the flow in the radial artery is checked first. Then, the left ITA is ligated distally and cut. The flow at the distal end of the left ITA is again checked.

RESULTS

The described method may be advantageous for MACAB by facilitating the anastomosis between the radial artery and the LITA.

Research

JAMA | Original Investigation

Association of Radial Artery Graft vs Saphenous Vein Graft With Long-term Cardiovascular Outcomes Among Patients Undergoing Coronary Artery Bypass Grafting
A Systematic Review and Meta-analysis

Mario Gaudino, MD; Umberto Benedetto, MD; Stephen Fremes, MD; Karla Ballman, PhD; Giuseppe Biondi-Zoccai, MD; Art Sedrakyan, MD, PhD; Giuseppe Nasso, MD; Jai Raman, MD, PhD; Brian Buxton, MD; Philip A. Hayward, MD; Neil Moat, MD; Peter Collins, MD; Carolyn Webb, PhD; Miodrag Peric, MD; Ivana Petrovic, MD; Kyung J. Yoo, MD; Irbaz Hameed, MD; Antonino Di Franco, MD; Marco Moscarelli, MD; Giuseppe Speziale, MD; John D. Puskas, MD; Leonard N. Girardi, MD; David J. Hare, MD; David P. Taggart, MD; for the RADIAL Investigators

Key Points

Question What are the short-term and long-term outcomes of total arterial revascularization at a population-based level?

Findings In this cohort study of 49 404 patients, compared with the coronary artery bypass with at least 1 arterial and 1 saphenous venous graft, total arterial revascularization was associated with improved long-term freedom from major adverse cardiac and cerebrovascular events, death, and myocardial infarction.

Meaning Total arterial revascularization may be the procedure of choice for patients with reasonable life expectancy requiring coronary artery bypass grafting.

IMPORTANCE Observational studies have suggested that the use of radi for coronary artery bypass grafting may improve clinical outcomes com of saphenous vein grafts, but this has not been confirmed in randomize

OBJECTIVE To compare clinical outcomes between patients receiving ra saphenous vein grafts for coronary artery bypass grafting after long-ter

CONCLUSIONS AND RELEVANCE In this individual participant d follow-up of 10 years, among patients undergoing coronary a of the radial artery compared with the saphenous vein was associated with a lower risk of a composite of cardiovascular outcomes.

JAMA. 2020;324(2):179-187. doi:10.1001/jama.2020.8228

SYSTEMATIC REVIEW AND META-ANALYSIS

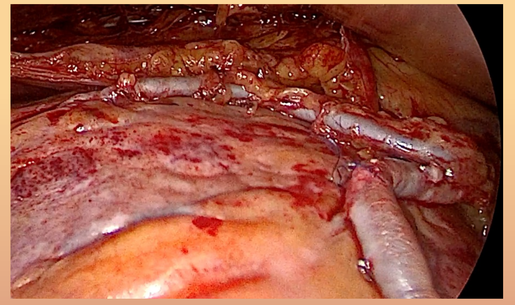
American Heart Association.

Radial Artery Versus Right Internal Thoracic Artery Versus Saphenous Vein as the Second Conduit for Coronary Artery Bypass Surgery: A Network Meta-Analysis of Clinical Outcomes

Mario Gaudino MD;* Roberto Lorusso, MD, PhD;* Mohamed Rahouma, MD; Ahmed Abouarab, MD; Derrick Y. Tam, MD; Cristiano Spadaccio, MD; Gaëlle Saint-Hilary, MS; Jeremy Leonard, MD; Mario Iannaccone, MD; Fabrizio D'Ascenzo, MD; Antonino Di Franco, MD; Giovanni Soletti, MD; Mohamed K. Kamel, MD; Christopher Lau, MD; Leonard N. Girardi, MD; Thomas A. Schwann, MD; Umberto Benedetto, MD; David P. Taggart, MD; Stephen E. Fremes, MD

Background—There remains uncertainty regarding the second-best conduit after the internal thoracic artery in coronary artery bypass grafting. Few studies directly compared the clinical results of the radial artery (RA), right internal thoracic artery (RITA), and saphenous vein (SV). No network meta-analysis has compared these 3 strategies.

Conclusions—The use of the RA or the RITA is associated with a similar and statistically significant long-term clinical benefit compared with the SV. There are no differences in operative risk or complications between the 2 arterial conduits, but DSWI remains a concern with bilateral ITA when skeletonization is not used. (*J Am Heart Assoc.* 2019;8:e010839. DOI: 10.1161/JAHA.118.010839.)



CONCLUSION

Minimally invasive and robotically assisted techniques are nevertheless important components to make surgical coronary revascularization fit for the 21st century and to be competitive with PCI in the range of treatment modalities for coronary artery disease.
The promising results of the MACAB indicate the need for further development of this method.

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21-Year Survival of Left Internal Mammary Artery–Radial Artery–Y Graft

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ABSTRACT

BACKGROUND In 1999, Royse et al. reported on the left internal mammary artery, radial artery, Y-graft technique (LIMA-RA-Y), which achieves total arterial revascularization (TAR). However, the most common coronary reconstruction remains LIMA and supplementary saphenous vein grafts (LIMA + SVG).

OBJECTIVES The goal of this study was to conduct a survival comparison of LIMA-RA-Y versus the conventional LIMA + SVG.

CONCLUSIONS Use of LIMA + SVG has worse survival than LIMA-RA-Y in achieving total arterial revascularization.
(J Am Coll Cardiol 2018;72:1332–40) © 2018 by the American College of Cardiology Foundation.

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