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LETTER TO THE EDITOR

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Issues during coronary and visceral revascularization in patients with Leriche syndrome and thoracoabdominal aneurysm

We read with interest the case report of Kitamura et al.[1] in which authors presented consequent coronary revascularization and thoracoabdominal replacement in a patient with coronary artery disease, thoracoabdominal aneurysm, and Leriche syndrome. We believe the manuscript contains certain issues to be discussed in details.

The internal thoracic arteries are among the major blood supplies to the lower extremities in case of Leriche syndrome.[1,2] They may dilate to provide sufficient blood flow to the legs.[2] The dilatation process may also be associated with increased risk of atherosclerosis and fragility. When patients with Leriche syndrome requires coronary revascularization two concerns arise:

(1) Since the gold standard revascularization of the left anterior descending coronary artery is with left internal thoracic artery, will the blood flow to the legs be compromised?
(2) Does the size of the left internal thoracic artery cause diameter discrepency with left anterior descending coronary artery and is the quality of the graft suitable for long term patency?

Although the authors investigated the collateral circulation in details with preoperative computerized tomography in their particular case, it would be informative for the readers if they provide additional information about the diameter and quality of the left internal thoracic artery graft in comparison with the left anterior descending coronary artery? The authors also indicated the patient complained of numbness in the lower extremities requiring medical and physical therapy to increase the blood flow.[1]

In case of serious peripheral arterial disease, when revascularization is planned with the utilization of the internal thoracic artery graft(s), concomitant ascending aorta-bifemoral bypass is an easy safety precaution as well as an alternative lower extremity revascularization procedure.[2,3] In the particular case of the authors with dilated thoracoabdominal aorta,[1] theroretically one may also speculate ascending aorta to femoral artery flow might also decrease the pressure in the distal dilated segments of the arterial tree.

The other issue regards to the requirement of cardiopulmonary bypass in a patient with thoracoabdominal aneurysm accompanied by Leriche syndrome. The images in the manuscript indicate a Type 5 thoracoabdominal aortic aneurysm with relatively disease free proximal descending aorta.[1] Authors preferred tapered style replacement of the distal descending aorta and viscereal revascularization with a 30-mm straight and 20-mm quadrifurcated graft with cardiopulmonary bypass support.[1] There is no information regarding revascularization of the posterior intercostal arteries although the patient did not experience any neurologic events[1] most probably due to the rich collateral supply to the spinal cord. However, could cardiopulmonary bypass and associated side effects[4] be omitted if the authors preferred proximal anastomosis with a side biting clamp, revascularization of the visceral arteries consecutively followed by division or ligation of the descending aorta? The right renal artery might be an issue of access concern; however, we assume it would not be very difficult in case of a pressure free aorta. Definitely in such a case the aneurysm sac would be left in place for timely thrombosis. This may also be advantageous for spinal cord gradual ischemic preconditioning. If complete aneursym thrombosis does not occur or very unlikely increase in sac size is observed, thrombosis may be facilitated with translumbar thrombin or glue injections.[5]

Once again the authors are to be congratulated for their successful treatment in such a challenging patient; however, clarification of the aforementioned issues would be of better benefit for the readers. Long term follow-up data of larger cohorts from multicenter studies are warrented to establish treatment protocols for this very unique subgroup of patients with coronary artery disease, thoracoabdominal aneurysm and Leriche syndrome.

CONFLICT OF INTERESTS

The authors declare that there are no conflict of interests.

Didem M. Oztas[1]
Ibrahim Erdinc[2]
Metin O. Beyaz[3]
Mehmet A. Onalan[4]
Serdar Bademi[5]
Mustafa O. Ulukan[6]
Orcun Unal[7]
Cenk Conkbayir[8]
Murat Ugurlucan[6]

[1]*Cardiovascular Surgery Clinic, Bagcilar Training and Research Hospital, Istanbul, Turkey*

[2]*Cardiovascular Surgery Clinic, Izmir Bozyaka Training and Research Hospital, Izmir, Turkey*
[3]*Department of Cardiovascular Surgery, Medical Faculty, Hatay Mustafa Kemal University, Antakya, Turkey*
[4]*Department of Cardiovascular Surgery, Dr. Siyami Ersek Thoracic and Cardiovascular Surgery Training and Research Hospital, Istanbul, Turkey*
[5]*Department of Cardiovascular Surgery, Bursa City Hospital, Bursa, Turkey*
[6]*Department of Cardiovascular Surgery, Medical Faculty, Medipol University, Istanbul, Turkey*
[7]*Cardiovascular Surgery Clinic, Yedikule Chest Diseases and Thoracic Surgery Education and Research Hospital, Istanbul*
[8]*Department of Cardiology, Medical Faculty, Near East University, Nicosia, Cyprus*

Correspondence
Murat Ugurlucan, MD, Department of Cardiovascular Surgery, Medical Faculty, Istanbul Medipol University, Goztepe Mahallesi, 2309 Sk. No: 6, 34214 Bagcilar/Istanbul, Turkey.
Email: muratugurlucan@yahoo.com

ORCID

Didem M. Oztas http://orcid.org/0000-0003-4108-6405
Murat Ugurlucan http://orcid.org/0000-0001-6643-9364

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