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Surgery of Moderate Coronary Artery Stenosis / Mattioli, A.V., Farinetti, A., Manenti, A., Roncati, L.. - In: ANNALS OF THORACIC SURGERY. - ISSN 0003-4975. - 106:5(2018), pp. 1594-1595. [10.1016/j.athoracsur.2018.05.035]

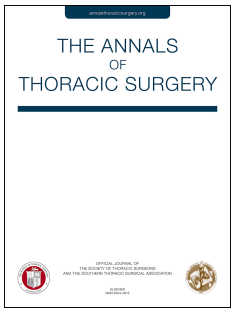
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Accepted Manuscript



Surgery of Moderate Coronary Artery Stenosis

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PII: S0003-4975(18)30833-6

DOI: 10.1016/j.athoracsur.2018.05.035

Reference: ATS 31688

To appear in: *The Annals of Thoracic Surgery*

Received Date: 24 April 2018

Accepted Date: 14 May 2018

Please cite this article as: Mattioli AV, Farinetti A, Manenti A, Roncati L, Surgery of Moderate Coronary Artery Stenosis, *The Annals of Thoracic Surgery* (2018), doi: 10.1016/j.athoracsur.2018.05.035.

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Surgery of Moderate Coronary Artery Stenosis

To the Editor:

The interesting paper by Raza et al. demonstrates that progression to severe stenosis is faster in grafted than in non-grafted moderate coronary artery stenosis (MCAS), especially when performed with saphenous vein (SV) rather than with internal thoracic artery (ITA) [1]. We correlate this to some particular patho-physiological and surgical aspects of ITA-grafts.

Coronary artery hemodynamics greatly changes after a bypass, because the new flow largely overwhelms the pre-existing, inducing a subsequent competition [2]. This is more striking in case of bypass with a SV than with an ITA. In the first case the blood flow, directly correlated with that of the ascending aorta, cancels or largely decreases any other downstream from a MCAS, favoring a subsequent thrombosis. In the second case, the new flow is modulated by ITA, a second-order elastic branch of the aortic arch. This artery behaves as a "feeding" elastic vessel, naturally predisposed to satisfy increased demands of blood. In coronary surgery this occurs especially when fashioned in a Y-shape on a single pedicle. Moreover, ITA benefits from a low susceptibility to atherosclerosis, and of a particular power of repairing elastolyis of the tunica media, secondary to age, diabetes, hypertension, etc., generating unspecialized smooth muscle- like cells not of vascular origin [3]. On contrary, SV-conduits remodel with deposition of extracellular collagen material, predisposing to fibrosis, with consequent loss of elasticity and increased risk of progressive obstruction. All this could explain the better results of ITA-grafts and assure surgeons about ITA as preferred conduits also in revascularizing symptomatic MCAS [1]. Besides, in multi-segmental lesions, typically of the left anterior descending coronary artery, an associated endarterectomy downstream to a MCAS, increases the graft run-off, through new-open septal perforator collaterals [4].

Beyond these surgical considerations, a basic diagnostic problem still remains concerning MCAS. After a first angiographic approach, further hemodynamic studies would demonstrate conditions of real vascular insufficiency, with an impending risk of myocardial severe ischemia, which represents an unquestionable indication to surgery [5].

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