Routine preoperative thoracic angiography or just follow the gut feeling?

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The rare case reported by Mashhour and coworkers,¹ besides describing a collateral vascular pathway never reported so far, emphasizes in particular the need for preoperative evaluation of the thoracic arteries, which represent, as we well know, adding value for myocardial surgical revascularization both in terms of survival and event-free survival.^{2,3} This opens a never-ending debate: Is routine angiography of the left internal thoracic artery (LITA) necessary or not?

Patel and colleagues⁴ reported the results of preoperative angiographic evaluation of the LITA in 101 patients; of the LITAs, 48.5% showed lateral costal branches with diameters greater than 1.5 mm. The incidence of significant left vertebral disease and proximal subclavian disease was 37.6% and 5%, respectively. However, the authors conclude that asymptomatic subclavian artery disease and the presence of lateral costal branches preoperatively did not correlate with post-coronary artery bypass grafting ischemia in the left anterior descending territory.

In 1999, our group⁵ reported the results of an angiographic study to evaluate postoperatively the anatomy of the harvested LITA. A common origin with other branches of the subclavian artery was present in 99 (33%) of 300 enrolled patients; the persistence of a lateral costal branch was rare (32 cases, 10%). A total of 35 branches (12%) were 1 mm or more. We concluded that a common origin with other branches of the subclavian artery and the persistence of the lateral costal branch are common aspects in the angiographic anatomy of the grafted LITA. Moreover, new branches, sometimes wider than 1 mm, develop with time.

In 1992, Feit and colleagues⁶ found significant features in 15% of 130 LITAs evaluated preoperatively, suggesting that preoperative evaluation of LITA should be a part of diagnostic angiography.

Today, it would be impossible to submit patients to a routine preoperative double thoracic angiographic study if they are selected for coronary artery bypass grafting, because the number of both diagnostic and interventional

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Central Message

Preoperative routine CTA of the thoracic arteries in selected patients undergoing coronary artery bypass grafting can be useful.

See Article page e25.

procedures, either elective or emergency, increases exponentially. In addition, selective angiography of a vessel sized 2.5 mm (1.5-3.5 mm)⁷ is invasive and could cause subclinical lesions of the arteries, which would subsequently hamper graft functioning. In this case report, the surgeon followed the *gut* feeling, given the uncommon size of the LITA (8 mm), thus preferring a revascularization with saphenous veins. A possible compromise might be just that suggested in the authors' conclusions, which in our opinion, represent the strength of this case report: the use of a noninvasive method such as computed tomography angiography (CTA), which allows a better spatial visualization of the thoracic circulation and any collateral pathway to be made in selected patients, such as patients with vascular disease. Karaman and colleagues⁷ used CTA to visualize 328 thoracic arteries (164 left and 164 right), concluding that CTA provides a precise and detailed evaluation of internal thoracic arteries with anatomic features and variations.

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