



GUIDELINES

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Letters

The Anterior Intercostal Artery Perforator Flap: Clinical Applications in Partial Breast Reconstruction

Sir:

We read with great interest the article by Carrasco-López¹ and colleagues, who have conducted a well-designed anatomical and radiologic study to identify the location of anterior intercostal artery perforators. The authors stated, "Their study is, to their knowledge, the first to assess the anatomy of the anterior intercostal perforators," although our publication early in 2012 already showed a preclinical cadaveric study, focusing on localization of the perforators and range of motion of the flap.² However, we congratulate the authors for their results, which not only confirm

our findings but also support further clinical applications that we are using.

Intercostal artery perforator flaps, in fact, have already been presented for chest and trunk oncologic reconstruction^{3,4} but, until now, few authors have mentioned their use to repair immediate or delayed breast defects following breast cancer conservative surgery.⁵ On the contrary, both anterior and lateral intercostal artery perforator flaps can easily reach the breast, with a good match in terms of skin texture, also providing a small amount of subcutaneous tissue. In particular, the

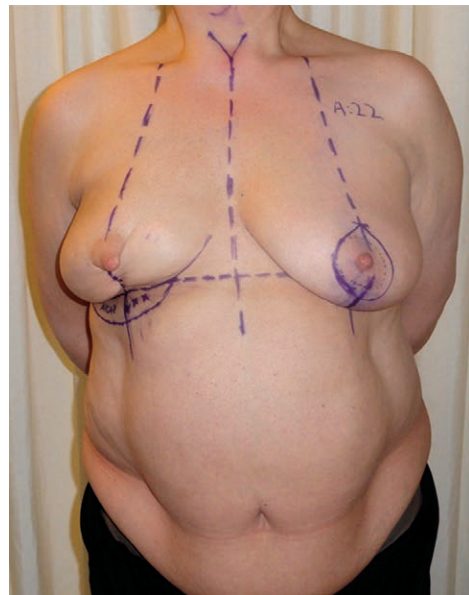


Fig. 1. A 63-year-old woman who underwent an inferior central quadrantectomy plus radiotherapy because of breast cancer. The preoperative view shows a partial skin and subcutaneous tissue defect with severe scar retraction. The Doppler examination revealed three perforators: two on a medial row and one on a central row, respectively.

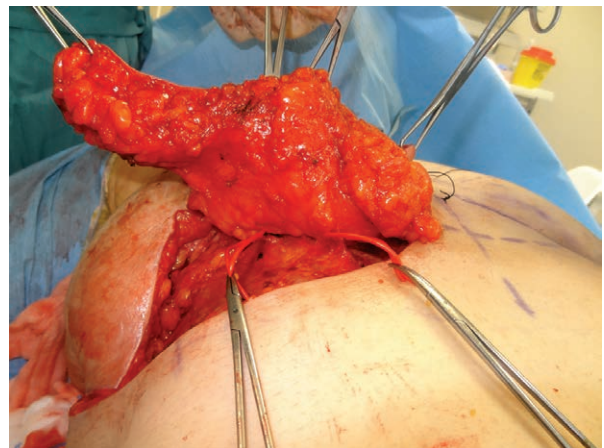


Fig. 2. Intraoperative view of the patient shown in Figure 1. The flap is islanded on two medial vessels.

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Fig. 3. Immediate postoperative view of the patient shown in Figure 1. The flap is rotated with a 90-degree angle. The superior portion was decorticated and buried.

anterior intercostal artery perforator flap, supplied by a greater number of perforators, offers superior mobility compared with the lateral intercostal artery perforator flap,² and may be successfully used for all breast quadrants.

At our institution, the anterior intercostal artery perforator flap is considered for correcting small defects following breast conservative surgery in the medial quadrants, whereas the lateral intercostal artery perforator flap is preferably used for the outer quadrants. To fill larger defects, a thoracodorsal artery perforator or a latissimus dorsi flap is preferred to recreate the mound. The anterior intercostal artery perforator flap is usually drawn below the inframammary fold according to hand-held Doppler findings and skin laxity (Fig. 1). In our experience, there is no need for a preoperative computed tomographic scan, as, on average, two or three perforators for each intercostal space are present. All perforators should be initially preserved (Fig. 2). An intraoperative Doppler evaluation of vessels is advisable, especially in delayed procedures and after radiotherapy, to check the most suitable perforator to nourish the flap and its viability. The flap can be mobilized in either V-Y or a propeller fashion with a maximum angle of 90 degrees, eventually sacrificing minor perforators to obtain better breast reshaping. The flap is preferably used with a skin island but can also be decorticated with its superior border cranially anchored to the pectoralis major fascia or to the skin (Fig. 3).

Tradeoffs are the relatively small amount of tissue that can be used, especially in thin types, and the quality of tissue in delayed reconstruction of irradiated patients, as the effects of radiotherapy on adjacent tissue cause long-lasting damage of the vascularization pattern and increase the risk of postoperative complications.

However, these flaps confirmed many advantages, as they are easily harvested and mobilized, and preserve

further reconstructive options. In our experience, no major loss has been registered, but mild recurrence of scar retraction has occurred requiring further fat graft sessions. We thus agree with Carrasco-López¹ and colleagues on the consistent and reliable vascularization of the anterior intercostal artery perforator flap, and our brief report supports the versatility of this flap in breast reconstruction.

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DISCLOSURE

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Reply: The Anterior Intercostal Artery Flap: Anatomical and Radiologic Study

Sir:

We appreciate the opportunity to respond to the interesting comments made by Tenna et al. regarding our recent article “The Anterior Intercostal Artery Flap: Anatomical and Radiologic Study,” published in *Plastic and Reconstructive Surgery* in March of 2017. We thank Dr. Tenna and colleagues for their thoughtful