Peer Review File

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Please answer the following questions:
1) in your methods , please explain: your sole factor for decision based on CTA was the optimal perforators. But those located centrally in the flap are often not the best ones (located paraumbilically).
- "Centrally" was intended to mean near the midline however was not clearly specified as noted by the reviewer. This sentence has now been corrected in line 132 to state that the perforators chosen were those that were ideally situated for the side and recipient site

2) in your techniaue please add to the Scheflan zones Hartrumpf`s name and reference as known to the wide public.
- Added on line 135 – "Hartrumpf scheflan zones". Reference added – 7

3) in the non CTA group you state that your preferred side is the contralateral side but only 56 % of this group had a contralat as to 78 % in the CTA group. please comment
- Contralateral is preferrable but due to past medical history of patients and features on cta, there ended up being more ipsilateral flaps raised as noted in lines 194-195.

4) in your results section , you have twice as much partial flap loss in the CTA group' please explain...?! this is cpontradictory to what you state in your discussion (references 16- 17)
- There were 2 patients with partial flap loss in the cta group and one in the other. Due to the small sample size this result was not significant (p value=1) as noted in lines 218-221.

5) further in the discussion you write that in the CTA , you looked into presence and calibre of the SEA - but this was not the deciding factor - should it be , and if not please elaborate
- Optimal perforator and SEA as identified on CTA was used to assist in decision making for optimal hemiabdomen use as noted in lines 106-107. Location of the perforators from the SEA were used as the main deciding factor (noted on 130-131) together with the characteristics of the SEA itself. We feel ideal perforator location and calibre is the most important factor in preoperative planning to minimize complications of hernia/bulge and flap loss.

6) You write that a medial or lateral strip of muscle was left in the CTA group - isnt this enough to explain the less buldging of the abdomen in this group ? kind of a MS TRAM flap... ?!
- Yes, that will assist in reducing occurrence of bulges. A sentence has been

added to 215-217 to clarify this point.

7) in the conclusion you note that the CTA provides more confidence to the surgeon but still in your group fat necrosis was higher, thus giving the surgeon a FALSE confidence, are you sure this is the right conclusion ???

- There were 7 (47%) cases of fat necrosis in the without cta group and 6 (33%) in the CTA group, showing there was a lower incidence of fat necrosis in the CTA group, this point has been clarified in line 168.

Reviewer B

Although perforator-based flaps have replaced musculocutaneous flap in breast (and many other) reconstruction, it might still have a place in certain circumstances. The author's data are good, as are the methods and results. However, the interpretation of these data, from my particular point of view, are not good enough. TRAM flaps have a robust vascularization in terms of their own angiosome (deep inferior epigastric artery) irrespective of whether a preop CTA is performed or not. However, the capture of adjacent angiosomes (zones 2-3-4) might (or might not) be unreliable no matter how consistent the vascularization of the primary angiosome is. Basically, DIEP and TRAM flaps have the same primary angiosome. The point in breast reconstruction is to know how much of the surrounding angisomes can our flap capture, and that can only be attained intraoperatively with fluorescence-guided imaging and not with CTA. Consequently, it is fluorescence (and not CTA) the technique to use to minimize the rate of partial flap or fat necrosis. The only benefit of CTA in TRAM flap would be the possibility of preserving as much rectus fascia as possible to minimize the risk of abdominal hernia/bulge or minimize the surgical impact on the abdominal wall function. It has been suggested (1) that, in TRAM flap, the risk of hernia or bulge is more related with the technique for abdominal wall closure than with the amount of preserved fascia (surprisingly, the authors do not use mesh at all). The author's data seem to confirm that suggestion and this is probably the most relevant conclusion of the manuscript. Another potential topic of research might have been the functional evaluation of the abdominal wall, but only if all "with CTA" patients had a fascial preserving procedure. Overall, CTA in TRAM flaps cannot contribute to overcome many of its drawbacks, but it certainly can contribute to perform a fascial-sparing technique. The relevance (OR NOT) of this fascial preservation should be stressed and further developed in the discussion because it is the most important contribution of CTA in TRAM flaps. As the authors suggest, CTA might not be cost-effective in TRAM flap reconstruction of the breast but I personally use it routinely in VRAM flaps in chest-wall reconstruction because I have the feeling (no data) that fascial preservation is important.

(1) Fitoussi A, Le Taillandier M, Biffaud JC, Selinger R, Clough KB. Evaluation fonctionnelle de la paroi abdominale après prélèvement d'un lambeau musculocutané de grand droit de l'abdomen [Functional evaluation of the abdominal wall after raising a rectus abdominis myocutaneous flap]. Ann Chir Plast Esthet. 1997 Apr;42(2):138-46. French. PMID: 9768148.

- Paragraph added in lines 191 to 200 and also 250 to 251 to expand on this point.

Reviewer C

Perforator mapping is useful for perforator flaps. While the pTRAM is an option for breast reconstruction, the indications for this surgery are limited because of the complications associated. There are too many other options for breast reconstruction for this paper to be relevant. This does not add in any meaningful way to the literature for breast reconstruction.