

Letter to the Editor: Predictors of internal mammary vessel diameter: A computed tomographic angiography-assisted anatomic analysis.

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Dear Professor Hart

We would like to congratulate Dr Cook and colleagues on their publication entitled "Predictors of internal mammary vessel diameter: A computed tomographic angiography-assisted anatomic analysis"¹ and take this opportunity to contrast their experience with ours. Our comments are based on a prospectively collected database of consecutive abdominal microvascular breast reconstructions performed by a single surgeon (CMM) using the total rib preservation technique of internal mammary vessel exposure.^{2,3}

Cook et al reported that on average the venous bifurcation occurred in the third intercostal space implying that a single internal mammary vein was a common occurrence from the third intercostal space going cranially. They, however, did not specify the percentage in which this occurred. On review of 215 consecutive breast reconstruction patients (from June 2008 to Sept 2016) with the total rib preservation technique of internal mammary (IM) vessel exposure, we found that the IM venous confluence was noted in the second intercostal space 18% of the time thus a single vein was present in 82% of our cases at this location.⁴ This contrasts with the ~94% reported by Cook et al. Therefore there were two veins in the 2nd space in 18% of our cases in sharp contrast to the 4% in Cook's series.

We also contend that the second intercostal space is optimal for anastomoses as the internal mammary vein in this space is post-confluence and consequently of larger calibre than that in the 3rd space. It is also worthwhile noting that it is more accurate to refer to the confluence of venous tributaries in describing the union of these vessels rather than the "bifurcation" referred to by Cook's group.

Additionally, in our experience, the second intercostal space is consistently wider than the third and is sufficiently low to enable the comfortable performance of microvascular anastomoses and to allow satisfactory flap inset without the breast mound being too high. This is supported by

our 100% free flap survival rate and 8.3% on-table anastomotic revision rate in a consecutive series of 253 flaps (215 patients) performed using the total rib preservation technique⁴.

Taking into account the above analyses, we would suggest that pre-operative assessment of internal mammary vessels using CT angiography advocated by Cook et al is not necessary and is to be eschewed because of the additional radiation dose especially when a CT angiogram of the donor vessels is also performed in the same patient. Our surgical technique of dissecting in the second intercostal space gives reliable access to the internal mammary vessels for anastomoses and has allowed us to opt for the total rib-preservation technique in all our cases.⁵

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