Three Alternatives for Head and Neck Reconstruction in the Absence of Recipient Vessels

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INTRODUCTION: Head and neck reconstruction in the context of previous irradiation or recurrence after previous ablation and reconstruction poses a difficult problem. Extending the vascular reach with use of vein grafts is commonly employed in an attempt to circumvent the absence of readily available recipient vessels.

PURPOSE: Explore the benefits and limitations of three reconstructive options that can provide a reliable alternative in this challenging situation.

METHODS: For pharyngoesophageal reconstruction in a vessel-depleted neck, we have reliably transferred a pedicled ileocolon flap (terminal ileum, cecum, ascending colon and proximal transverse colon) based on the left ascending colic artery. After transection of the segment, the cecum reaches the oropharynx for an end-to-end anastomosis. The distal end of the proximal transverse colon is anastomosed to a Roux-en-Y jejunal loop. Intestinal continuity is reestablished by anastomosing the terminal ileum to the distal transverse colon end-to-end. When the back-up transverse cervical and thoracoacromial vessels are depleted, the internal mammary vessels are an alternative as a recipient site. However, if the pedicle of the flap cannot reach the chest, a free forearm flap (FFF) can serve as a reliable arterial cable bridging the gap. The advantages over the conventional vein graft are multiple:

1- A FFF can he hung in the air, both decreasing waste of length and bypassing a contaminated neck.
2- The large artery is more reliable than the vein graft, which has less tolerance to the high arterial pressure and is more prone to vasospasm.
3- The surgery can be done in two stages, first the FFF and then the proposed flap, thereby ensuring definitive reconstruction.

Finally, an extended latissimus dorsi flap can provide another pedicled option for head and neck reconstruction. An appropriate size skin paddle is designed most distally from the axilla in the lumbar region. The flap is then based on a skeletonized thoracodorsal/subscapular artery with division of the serratus and circumflex scapular vessels. This allows the flap to reach as high as the lower two thirds of the face.

CONCLUSION: In a hostile neck, alternative strategies to traditional vein grafting are a desirable addition to the armamentarium of a reconstructive surgeon. Pedicled ileocolon flap, FFF vascular bridge and extended latissimus dorsi flap are safe solutions to difficult problems.