

Extending the Reach of Free Flaps to the Calvarium or Skull Base Using the Descending Branch of the Lateral Circumflex Femoral Vessels.

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Introduction: Free tissue transfer to the calvarium or skull base is often complicated by insufficient pedicle length, especially if the superficial temporal vessels are inadequate. A saphenous vein loop can be used to reach the high-flow, large-caliber vessels of the neck, but due to the vein's taper and thick wall, there is often a mismatch of vessel caliber and wall thickness. Following the principle of "like-for-like", we prefer the descending branch of the lateral circumflex femoral (DBLCF) vessels to achieve a more anatomic extension of a free flap pedicle.

Methods: Our experience using the DBLCF pedicle extender over the past 5 years was reviewed. In some cases, the flap was first transferred to the DBLCF vessels and allowed to perfuse on the thigh while the recipient site was prepared, and then transferred to vessels in the neck (2-stage transfer); in others, the flap and pedicle extender were both transferred in a single ischemic period (1-stage transfer). Indications, operative time, ischemia time, and complications (especially vascular-related), were noted.

Results: The DBLCF pedicle extender was used in 13 cases. Indications included tumor reconstruction (4), trauma reconstruction (3), osteoradionecrosis (2) and various congenital problems (4). A 2-stage strategy was employed in 7 cases, and 1-stage in 6. The longest pedicle extender harvested in the series was 15 cm. Average ischemic time for a 1-stage transfer was 74 minutes. Average ischemic time for a staged transfer was 74 minutes for stage 1 and 67 minutes for stage 2. Thrombosis of the arterial graft occurred in 2 cases, both of which were salvaged intra-operatively.

Discussion: The DBLCF pedicle extender provided adequate length and excellent vessel match at both the artery and the vein with few vascular complications. We feel that the DBLCF vessels are superior to a saphenous vein loop for this indication due to their superior tissue characteristics and size match.