A Case Report of Aberrant Vascular Anatomy of the Deep Inferior Epigastric Artery Flap

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Abstract : The deep inferior epigastric artery perforator flap (DIEP) is used to reconstruct large volumes of tissue. The DIEP flap is based on the deep inferior epigastric artery (DIEA) and vein. Accurate knowledge of the anatomy of these vessels allows for efficient dissection of the flap, minimal damage to surrounding tissue, and a well vascularized flap. A 54 year old lady was assessed for bilateral delayed autologous reconstruction with DIEP free flaps. The right DIEA was consistent with the described anatomy. The left DIEA had a vessel branching shortly after leaving the external iliac artery and before entering the muscle. This independent branch entered the muscle and had a long intramuscular course to the largest perforator. The main DIEA vessel demonstrated a type II branching pattern but had perforators that were too small to have a viable DIEP flap. There were no communicating arterial branches between the independent vessel and DIEA, however, there was one venous communication between them. A muscle sparing transverse rectus abdominis muscle flap was raised using the main periumbilical perforator from the independent vessel. Our case report demonstrated an unreported anatomical variant of the DIEA. A few anatomical variants have been described in the literature, including a unilateral absent DIEA and peritoneal-cutaneous perforators that had no connection to the DIEA. Doing a pre-operative CTA helps to identify these rare anatomical variations, which leads to safer, more efficient, and effective operating.