

THREE-DIMENSIONAL ANATOMICAL STUDY OF THE TENSOR FASCIAE LATAE PERFORATOR FLAP

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PLASTIC SURGERY

BACKGROUND: In order to harvest a Tensor Fasciae Latae (TFL) perforator flap, a precise description of its perforator anatomy is required. There have been conflicting reports of the vascular supply of the muscle and its overlying skin. The objective of this study was to evaluate the perforator anatomy of the TFL muscle according to the location, origin, type, caliber, and length of vessels that supply the muscle.

METHODS: This study was performed on human cadavers (n=16 thighs) that were injected with a mixture of lead oxide and gelatin through the femoral artery. Whole body computed tomography scans were performed. Three-dimensional images of the arterial anatomy were created using Materialise Interactive Medical Image Control (MIMICS). Anatomical dissection of all cadaver thighs was carried out to visualize the arterial blood supply of the muscle and its regional perforators.

RESULTS: Sixteen thighs were included in the study. All perforators originated from the ascending branch of the lateral circumflex femoral (LCFA-asc) artery. The average number of perforators was 10.9 ± 4 . The mean external diameter of the LCFA-asc artery was $2.7 \text{ mm} \pm 0.4$, mean length: $3.6 \text{ cm} \pm 0.6$. The distance of the insertion point of the vascular pedicle to the ASIS ranged from 6.7-10.2 cm. All our dissections showed musculocutaneous perforators (n=16) and 14 had septocutaneous perforators.

CONCLUSION: The main vascular supply to the TFL muscle is the ascending branch of the lateral circumflex femoral artery, which also gives rise to direct and indirect regional perforators. MIMICS provides excellent 3-Dimensional anatomical information about cutaneous perforators of the TFL perforator flap.