

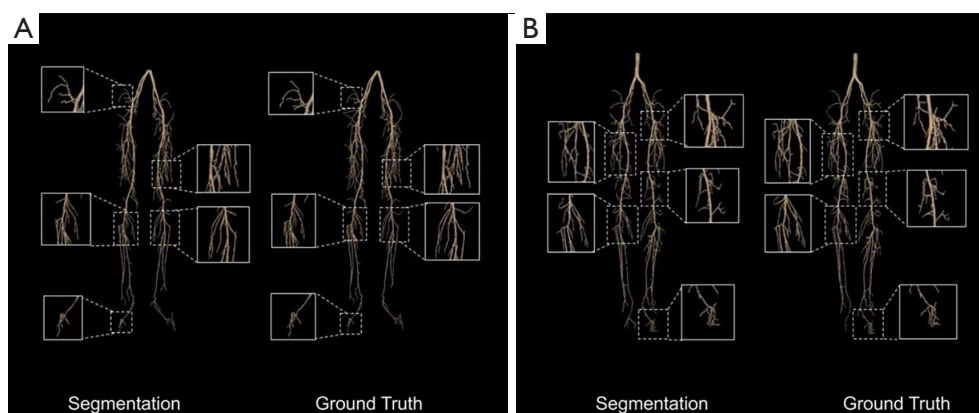


Figure S1 Two visual examples of the overall vessel segmentation results from LEAS-Net. (A) A 66-year-old male patient treated with perforator flap transplantation after surgical resection of oropharyngeal cancer. (B) A 72-year-old female patient treated with perforator flap transplantation after surgical resection of tongue cancer. LEAS-Net, lower-extremity artery segmentation network.

Table S1 Segmentation performance for large lower-limb vessels in the internal test set and independent test set

Vessel	Internal test set		Independent test set	
	Dice	clDice	Dice	clDice
Right				
CIA	0.86	0.91	0.86	0.87
EIA	0.87	0.94	0.91	0.93
FA	0.86	0.94	0.89	0.93
POA	0.87	0.95	0.84	0.89
IIA	0.77	0.85	0.79	0.82
DFA	0.78	0.79	0.79	0.74
ATA	0.81	0.92	0.78	0.84
PTA	0.78	0.87	0.82	0.87
PEA	0.73	0.84	0.82	0.86
Left				
CIA	0.86	0.92	0.86	0.90
EIA	0.85	0.91	0.92	0.94
FA	0.84	0.93	0.89	0.92
POA	0.84	0.92	0.86	0.90
IIA	0.75	0.84	0.80	0.81
DFA	0.75	0.77	0.84	0.77
ATA	0.76	0.88	0.80	0.84
PTA	0.75	0.87	0.79	0.85
PEA	0.72	0.82	0.81	0.83
AA	0.87	0.94	0.88	0.95
Mean	0.81	0.88	0.84	0.87

AA, abdominal aorta; ATA, anterior tibial artery; CIA, common iliac artery; clDice, center-line Dice coefficient; DFA, deep femoral artery; EIA, external iliac artery; FA, femoral artery; IIA, internal iliac artery; PEA, peroneal artery; POA, popliteal artery; PTA, posterior tibial artery.

Table S2 Segmentation performance for small flap vessels in the internal test set and independent test set

Vessel	Internal test set		Independent test set	
	Dice	cIDice	Dice	cIDice
Right				
ALTP	0.67	0.75	0.68	0.72
PAP	0.68	0.74	0.73	0.75
Left				
ALTP	0.64	0.71	0.71	0.74
PAP	0.65	0.70	0.71	0.71
Mean	0.66	0.73	0.71	0.73

ALTP, anterolateral thigh perforator; cIDice, center-line Dice coefficient; PAP, peroneal artery perforator.

Table S3 Comparison of the weighted kappa coefficient between LEAS-Net and human radiologists

Vessel	LEAS-Net vs. R1	LEAS-Net vs. R2	LEAS-Net vs. R3
Overall VR	0.42 (0.35, 0.50)	0.56 (0.49,0.69)	0.75 (0.67,0.88)
Overall MIP	0.41 (0.34, 0.47)	0.55 (0.48,0.62)	0.68 (0.61, 0.76)
Perforator vessels	0.21 (0.16, 0.26)	0.35 (0.28, 0.42)	0.64 (0.56, 0.72)

Data are presented as kappa (95% CI). CI, confidence interval; LEAS-Net, lower-extremity artery segmentation network; MIP, maximal intensity projection; R1, radiologist 1; R2, radiologist 2; R3, radiologist 3; VR, volume rendering.