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Titel des Beitrags: Reverse flow facial artery as recipient vessel for perforator flaps.

Abstract: In perforator flaps, anastomosis between flap and recipient vessels in the neck area is often difficult due to small vessel diameter and short pedicle. The aim of this study was to investigate whether the retrograde flow of the distal, paramandibular part of the facial artery would provide sufficient pressure and size to perfuse perforator flaps. Before and after occlusion of the contralateral facial artery, retrograde and anterograde arterial pressure was measured on both sides of the facial artery in 50 patients. The values were compared with the mean systemic arterial pressure. Diameters of facial arteries in the paramandibular region and perforator flap vessels were evaluated by morphometry. Arterial pressure in the distal facial artery with retrograde flow was 76% of the systemic arterial pressure. The latter equaled approximately the anterograde arterial pressure in the proximal end of the facial artery. Mean arterial pressure of the facial arteries decreased after proximal occlusion of the contralateral facial artery, which was not significant (P = 0.09). Mean diameter of the distal facial arteries in the mandibular region was 1.6 mm (range 1.3-2.2 mm; standard deviation 0.3 mm; n = 50), that of the perforator flap arteries 1.3 mm (0.9-2.6 mm; 0.4 mm; n = 20). Facial arteries, based on reverse flow, successfully supported all 20 perforator flaps. Retrograde pulsatile flow in the distal facial artery sustains perforator flaps even if the contralateral facial artery is occluded.
Proximity of the distal facial arteries to the defect compensates for short pedicles. Matching diameters of the arteries are ideal for end-to-end anastomosis.