

#11 PREDICTING THE HEALING OF TRANSMETATARSAL AMPUTATION IN DIABETIC PATIENTS.

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Background and Objectives : Transmetatarsal foot amputation (TMA) is a durable reconstruction in diabetic patients with digital gangrene. However, predicting TMA healing remains difficult. Our goals were to (1): determine the success rate of TMA (2): identify factors predictive of TMA healing, in particular arterial foot anatomy.

Methods : Retrospective review of all diabetic patients undergoing TMA. Blood supply to the foot was classified as anterior (AT and/or DP artery), posterior (PT or plantar arteries), or equally distributed (both systems patent, or peroneal artery runoff). Foot vessels were assigned run-off scores from 0 to 3 according to SVS/ISCVS criteria.

Patient Population and Data : 44 TMAs in 29 men and 12 women (age 59 ± 11 years). The average peri-procedural (TMA) toe-brachial index (TBI) was 0.23 ± 0.23 , and ankle-brachial index (ABI) was 1.18 ± 0.35 . All patients underwent arteriography and revascularization was done in 35 cases. In 9 cases (20%), no bypass was deemed necessary (7) or feasible (2). In 32 cases (70%), one or more podiatric procedures preceded TMA. Blood flow to the foot was deemed mostly anterior in 16 cases (36%), mostly posterior in 17 (39%), and equally distributed in 11 (25%). The TMA was left open in 19 cases (43%), and closed with staples or nylon sutures in the remainder.

Results : Overall limb salvage was achieved in 30 cases (88%) at a median follow-up of 48 weeks. Three of the four patients on dialysis required leg amputation (75 %) vs. 11 (27%) of the 40 non-dialysis cases ($p = 0.05$). When the TMA was left open, leg amputation was more likely (58 %) vs. when closed primarily (12%) ($p = 0.01$). No other factors were predictive of TMA healing, including angiographic scores in the foot and calf. Likewise, whether the blood flow to the foot was mainly anterior or posterior did not affect the likelihood of successful TMA healing. Statistically, TMA failure was not associated with need for revascularization. However, both patients with no revascularization options required BKA.

Conclusions : TMA healing in the diabetic patient can be expected in two thirds of cases, but cannot be predicted by angiography. Primary stump closure is associated with ultimate success in TMA healing. Healing appears more related to local factors in the foot than to vascular supply.