Predictors for the Healing of Transmetatarsal Amputations: Retrospective Study of 91 Amputations

Reference:

Scientific Literature Review

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Podiatric Relevance:
This article offers valuable information for the Podiatric Surgeon regarding several factors that relate to the healing potential of Transmetatarsal Amputations (TMA’s).

Methods:
Eighty patients, 91 TMA’s were retrospectively studied (1995-2003). Indications included ischemia and infection of the forefoot. One surgeon performed surgery, perioperative management and post-operative care. Wound closure was primary or delayed primary for infected limbs via skin grafts, negative pressure wound therapy or flaps. Preoperative perfusion in patients with non-palpable pedal pulses was assessed by a vascular surgeon with noninvasive studies. Demographics, comorbidities, wound healing and infection parameters were evaluated. Analysis was done with standard deviations for age, Student’s t-test, Chi-square tests.

Results:
Eighty patients underwent 91 TMA’s, 11 bilateral with 45 revascularization procedures. Of sixty-two limbs initially healed (group 1) at the 3 month follow up, only 48 remained healed. Eleven of 14 limbs healed by secondary intention, 2 required below knee amputations, 1 patient expired. Twenty nine patients did not initially heal (group 2) at the 3 month follow up. Ten healed by secondary intention at final evaluation, 17 of the 19 remained had proximal amputations. Two amputations due to bypass graft occlusion (12%), the others from non-healing lower extremity wounds. Statistically significant at final evaluation, 20 of 27 group 1 patients (74%) healed after revascularization (p=.034). End-stage renal disease (ESRD) was found in 13 of 19 (68%) group 2 patients (p=.02) but only 2 of 10 group 1 had ESRD (20%). Also significant, leukocytosis was demonstrated in 13 of 19 (68%) group 2 patients (p=.005) but only in 1 of 10 group 1 patients (10%).

Conclusion:
Based on this article’s results, 69% final healing rate and 77% ambulating, primary closure and revascularization lead to more favorable outcomes. Leukocytosis and ESRD are associated with non-healing amputations. Finally ischemia, comorbidities and lack of predictive factors should not discourage limb salvage attempts.