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Effect of revascularization on transmetatarsal amputation healing in diabetic ischemic foot

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Background: Diabetic patients present high incidence of limb loss resulting from advanced forefoot gangrene and infection. Transmetatarsal amputation (TMA) is a durable reconstruction in the diabetic patient and results an interesting option in achieving foot salvage. Presence of critical limb ischemia is an important prognostic factor on midfoot amputation healing. In the last years peripheral angioplasty, in particular infrapopliteal, demonstrate efficacy in limb salvage but there is not evidence that kind of revascularization can affect the results of TMA.

Aim of the study: to evaluate the effect of revascularization on TMA healing and time of healing. **Materials and methods:** we analysed TMA performed in the last four years in diabetic patients with ischaemic foot. Patient factors, operative complications and mortality (< 30 days), kind of revascularisation, number of vessels open at ankle level, wound healing, limb salvage and walking capacity were evaluated during a mean follow-up of 12.2±8.7 months (range 3-43).

Results: we founded 159 TMA performed in 153 diabetic patients. Mean patients age was 71.2±9,9 (mean±SD), 79% were men, mean glycosilated haemoglobin was 8.20±1.76. 58.5% patients had coronary artery disease, 10.7% previous stroke, 37.7% patients presented renal failure, and 10.7% had dialysis-dependent renal failure. 159 limbs with critical limb ischaemia were revascularized: by-pass in 15.2% and by endovascular procedures in 84.8%. Healing was obtained in 128 TMA (80,5%). Mean time to healing was 105.4±98.9 days (range 30-500 days). Predictive factors for healing resulted number of vessels open at ankle level (odd ratios 7.42) and closed TMA (odds ratio 8,22). Analysis of the number of vessel open demonstrate a significant trend in time of healing: 160.0±155.6 days with 0 vessel open, 125.9±113.7 days with 1 vessel open, 95.0±79.5 days with 2 vessels open, 88.6±108.5 days with 3 vessel open.

Conclusions: in diabetic ischaemic foot TMA outcome is influenced to kind of revascularization. Every vessel open at ankle level reduces about of 31 days the time of healing. Data from this study indicate that efforts should be done during revascularization to open the most number of vessels to reduce time of healing.