A Retrospective Review of Risk Factors and Conversion Rate of Transmetatarsal Amputations to Below or Above Knee Amputation

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Category: Diabetes

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Introduction/Purpose: Despite the presence of several studies examining the conversion from transmetatarsal amputation (TMA) to a more proximal amputation, few studies identified the possible predictors of failure. The objective of this study is to examine the rate of conversion of transmetatarsal amputation to below or above knee amputation, and to identify the risk factors for conversion.

Methods: A retrospective cohort study was performed examining 71 transmetatarsal amputations performed by a single group of foot and ankle subspecialists within a single specialty group between October 1, 2005 and August 25, 2015. Demographic information and comorbidities were recorded, as were complications, readmission rate, and rate of conversion to a more proximal amputation.

Results: Of the 71 patients who underwent transmetatarsal amputation during the study period, 74.7% progressed to a revision amputation or more proximal amputation at a mean of 9.7 months, but a median of only 3.2 months. 87.3% progressed to below knee amputation, 9.9% underwent revision transmetatarsal amputation, and 2.8% received an above knee amputation. Of the patients who progressed to more proximal amputation, 88.2% had diabetes mellitus, 72.4% had a pre-operative ulceration, and 81.7% had peripheral neuropathy. Only 52.7% had diagnosed peripheral vascular disease, 38.1% had a history of renal disease, and 35% were smokers.

Conclusion: Transmetatarsal amputation has an extremely high short-term reamputation rate with the vast progressing to a below knee amputation. Comorbidities such as diabetes mellitus, neuropathy, and history of ulceration are often found in these patients, while renal and peripheral vascular disease as well as tobacco abuse are not necessarily present. This high rate of reamputation may bring into question the efficacy of performing transmetatarsal amputation as opposed to a more proximal amputation as a definitive procedure when lower extremity amputation is required.

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