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Analysis of several factors affecting the result of free flap transfer in the treatment of necrotizing soft tissue defect in diabetic foot

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Background and aims: Plastic and reconstructive surgeons have used free tissue transfer to heal large, complex wounds. However, their use in patients with diabetic foot ulcers has been less well documented, and the important factors affecting the operative result has not been analyzed. Our study is about the retrospective analysis of a consecutive series of patients with necrotizing soft tissue defect in diabetic foot, who were treated with free flap transfer. **Patients and methods:** Between 2006 and 2011, 23 diabetic foot patients treated with free flap transfer were included. The mean age was 65.2 and there were 21 males and 2 females. The results of operation were divided into complete healing without additional treatment, partial failure with additional wound treatment, total failure with flap necrosis. ABI, presence of ASO (vessel calcification in X-ray), and other factors (ex. infection, defect size, defect depth, renal function) were compared between 3 groups.

Results: ABI is not significantly correlated with the success. But, presence of ASO significantly lowered the percentage of successful free flap transfer. ($P=0.003$). The other factors showed no correlation with the flap failure rate. **Conclusions:** Only ABI could not be absolute indicator for determining the candidate of free flap surgery. But, presence of ASO in diabetic foot makes the result of defect covering worse significantly. In the treatment of wide skin defect of those patients, bypass surgery or angioplasty for magnifying perfusion around the defect should be considered preoperatively for convinced limb salvage.