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Title

Osseointegration for Diabetic Patients: The Risk of Infection versus the Reward of Mobility

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Summary

This is the first 5 year follow up study reporting on the clinical outcomes of diabetic patients receiving an osseointegrated reconstruction.

Introduction/ basics

Osseointegration is a novel approach for the treatment and rehabilitation of amputees that can eliminate the problems associated with socket prostheses. Over 70% of amputations in developed countries are due to vascular causes, with diabetes mellitus accounting for a significant portion of these amputations. This is the first study reporting on the clinical outcomes of Osseointegrated reconstruction following amputation in diabetic patients, who have traditionally been excluded from this procedure due to higher risks of developing complications.

Material method; implementation/ process

This is a case series with two-year follow-up in 30 diabetic patients with trans-tibial and trans-femoral amputation out of which 4 are bilateral amputees, who received Osseointegrated implants between 2013 and 2019. Clinical and functional outcomes were assessed, including pain, prosthesis wearing time, mobility, walking ability, and quality of life. Adverse events were monitored and recorded, including infection, fractures, implant failure, revision surgery, and further amputation.

Results

9 trans-tibial, 24 trans-femoral and 1 trans-humeral amputees (aged 30-74 years) were included in this study. At one year following Osseointegration surgery, all patients were pain-free, the 8 patients who were wheelchair-bound prior to surgery were ambulatory, and the other 20 demonstrated improved mobility. Five patients experienced infection events, which were successfully treated with surgical debridement and antibiotics. One patient experienced peri-

prosthetic fracture after a fall, which was fixated by retrograde nail with a lag screw. Three patients underwent revision of osseointegration implant within an average of 1.9 years due to aseptic loosening and implant fracture. No other adverse events were recorded.

Discussion/ conclusion; conclusion for the practice

Initial results of rehabilitating lower limb amputees with a history of diabetes mellitus using osseointegrated implants have demonstrated improvements in function, mobility, and quality of life, which can have a protective role in controlling the underlying diabetic condition.

Osseointegration can be considered a feasible alternative to socket prostheses for treating these patients.

References

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