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Title

Complication management and Re-operation Rates After Osseointegrated Reconstruction.

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Summary

The objective of this study is to examine the rate of occurrence and reports on the best management practices of serious complications across a multi-centre review of more than 1000 osseointegration surgeries.

Introduction/ basics

Osseointegration has emerged as a promising alternative to rehabilitating with a traditional socket mounted prosthesis. Advantages have been reported to include improved functional mobility, better osseoperception, improved comfort, reduced pain, better biomechanical alignment and better gait, which all lead to a less restricted lifestyle and significantly improved quality of life. A major concern of the Osseointegrated approach lies in the risk of infections occurring from the permanent transcutaneous opening often referred to as the stoma. Several systematic reviews have indicated that the occurrence of minor infections can be quite common, serious complications are reported to be rare. In addition to commonly anticipated complications including fractures, surgical debridements or revisions, we have identified several significant events in which a patient may require to be readmitted and go through additional surgery.

Material method; implementation/ process

A detailed analysis has been performed on all osseointegration surgeries performed by the Osseointegration Group of Australia and it's affiliates between since 2010. The majority of surgeries took place in Australia, the United States, the Middle East as well as in Europe. All events leading to a re-admission and subsequent re-operation have been identified through hospital operation records and pooled together for meta-analysis. Events identified include:

revision of implants, periprosthetic fracture fixation, surgical debridement due to infections, neurectomies and soft- tissue refashioning.

Results

Over 800 surgeries have been identified with a minimum 12-month follow-up time and included in this study. These included tibial, femoral and humeral, radial-ulnar and transpelvic osseointegration cases. The majority of these were performed using a single stage protocol. While general complications such as infection and soft tissue refashioning are common, serious events such as revision and fracture are rare. Interestingly, the rate of debridements and soft-tissue refashions were found to be higher among patients who were operated using a two-stage surgery.

Discussion/ conclusion; conclusion for the practice

Many events leading to readmission after the primary surgery may not necessarily be graded as a complication of the osseointegration technique, but will still amount to a significant inconvenience for the patient and financial burden of the healthcare system. In this study, we have identified several addition possible reasons in which an osseointegration patient may need to be re-admitted into hospital for additional surgery. It was identified that through the implementation of improved surgical techniques and rehabilitation protocols, the rate of several of these re-operation events can be largely reduced, thus improving the overall outcomes of patients undergoing osseointegration surgery.

References

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