Long Term Outcomes of Total Knee Arthroplasty Following Soft Tissue Defect Reconstruction with Flaps

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PURPOSE: Infections following total knee arthroplasty (TKA) often result in plastic surgery consultation in attempt to salvage the prosthesis. Muscle and fasciocutaneous flaps have become a mainstay of this salvage reconstruction.[1,2] These flaps often lead to short-term success.[3-5] However, does short-term success result in long-term knee salvage? Does flap reconstruction help eradicate infection when a large foreign body must be maintained in the wound? Or does the flap merely suppress the infection with later failure of the knee reconstruction? We have attempted to answer these questions by retrospectively analyzing a large number of TKA reconstructions requiring muscle or fasciocutaneous flap coverage.

MATERIALS AND METHODS: A retrospective review of patients treated with flaps after failed TKA between 1998 and 2014 was conducted. Patients requiring flap coverage of soft-tissue defects were included into Group 1. Patients with no soft-tissue defects, but with extensive debridement during revision TKA requiring immediate flap reconstruction were included into Group 2.

RESULTS: Fifty-eight patients in Group 1 were treated with 86 flaps, and 15 patients in Group 2 were treated with 17 flaps. Mean length of follow-up was 67.0 and 54.7 months, respectively ($p=0.21$). Flap related complications and number of subsequent flap revisions were comparable in both groups. Patients in Group 1 had a higher rate of implant reinfection (58% vs. 27%; $p<0.05$), amputations (25% vs. 0%; $p<0.05$), and number of subsequent prosthesis revisions (2.2 vs. 0.9; $p<0.05$). Functional joint was preserved in 54% and 80% of cases, respectively. Mean range of motion and quality of life were significantly better in Group 2 ($p<0.05$).

CONCLUSION: Flap reconstruction allowed achieving stable coverage of the prosthesis, but the reinfection rate was surprisingly high, patients needed multiple additional revisions and only 54% an 80% of functional implants were retained after 5 years. This should be taken into consideration while discussing different treatment options for soft-tissue defects around the knee prosthesis.

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