

Outcomes of the Gastrocnemius Flap Performed by Orthopaedic Surgeons in Salvage Revision Knee Arthroplasty: A Retrospective Study at a Tertiary Orthopaedic Centre

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Abstract : Background and Objectives: The gastrocnemius myofascial flap is used to manage soft-tissue defects over the anterior aspect of the knee in the context of a patient presenting with a sinus and periprosthetic joint infection (PJI) or extensor mechanism failure. The aim of this study was twofold: firstly, to evaluate the outcomes of gastrocnemius flaps performed by appropriately trained orthopaedic surgeons in the context of PJI and, secondly, to evaluate the infection-free survival of this patient group. Methods: We retrospectively reviewed 30 patients who underwent gastrocnemius flap reconstruction during staged revision total knee arthroplasty for prosthetic joint infection (PJI). All flaps were performed by an orthopaedic surgeon with orthoplastics training. Patients had a mean age of 68.9 years (range 50-84) and were followed up for a mean of 50.4 months (range 2-128 months). A total of 29 patients (97 %) were categorized into Musculoskeletal Infection Society (MSIS) local extremity grade 3 (greater than two compromising factors), and 52 % of PJIs were polymicrobial. The primary outcome measure was flap failure, and the secondary outcome measure was a recurrent infection. Results: Flap survival was 100% with no failures or early returns to theatre for flap problems such as necrosis or haematoma. Overall infection-free survival during the study period was 48% (13 of 27 infected cases). Using limb salvage as the outcome, 77% (23 of 30 patients) retained the limb. Infection recurrence occurred in 48% (10 patients) in the type B3 cohort and 67% (4 patients) in the type C3 cohort ($p = 0.65$). Conclusion: The surgical technique for a gastrocnemius myofascial flap is reliable and reproducible when performed by appropriately trained orthopaedic surgeons, even in high-risk groups. However, the risks of recurrent infection and amputation remain high within our series due to poor host and extremity factors.

Keywords : gastrocnemius flap, limb salvage, revision arthroplasty, outcomes

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