CORR Insights

CORR Insights®: What Factors Influence the Success of Medial Gastrocnemius Flaps in the Treatment of Infected TKAs?

David J. Backstein MD, MEd, FRCSC

Where Are We Now?

Wound-healing complications around the knee are among the greatest challenges in revision knee replacement surgery. In particular, restoration of soft-tissue defects of both skin and underlying capsule/muscle is critical to the elimination of infection and ultimate attainment of a functional knee. The incidence of wound problems requiring return to the OR within 30 days of the index TKA is 0.33% [1]. Gastrocnemius rotational flaps can

provide coverage for major wound defects both simply and effectively [2], but some research suggests that comorbidities like diabetes and peripheral vascular disease can increase the risk these flaps may fail [2].

Unfortunately, due to the rarity and complexity of these situations, most studies are of heterogeneous patient populations with varying severity of defect and differing infecting organisms. In addition, most studies suffer from variability in terms of indications, duration of time elapsed prior to treatment, surgical technique, and postoperative rehabilitation protocols.

members are on file with the publication and can be viewed on request.

The opinions expressed are those of the writers, and do not reflect the opinion or policy of CORR® or The Association of Bone and Joint Surgeons®.

This CORR Insights® comment refers to the article available at DOI: [10.1007/s11999-015-4624-z](https://doi.org/10.1007/s11999-015-4624-z).

D. J. Backstein MD, MEd, FRCSC (✉)
University of Toronto, Mt. Sinai
Hospital, 600 University Ave, suite
476D, Toronto, ON M5G 1X5, Canada
e-mail: DBackstein@mtsina.on.ca

Where Do We Need To Go?

Better identification of risk factors for failure or complications of gastrocnemius rotation flap can help us identify which patients may benefit from free flaps, arthrodesis, or possibly amputation. Persistent or recurrent infection was common (52%) following two-stage treatment in this study by Tetreault and colleagues, suggesting that treatment for periprosthetic infection in the presence of severe wound defects has a poorer prognosis than standard two-stage treatment, even when a gastrocnemius flap has been performed. The success of the flaps themselves in this series strongly suggests that rotational flaps are a necessary, but not sufficient, component of the overall treatment of infections in the presence of soft-tissue defects.

How Do We Get There?

Future study on this topic should include a homogenous population of

This CORR Insights® is a commentary on the article "What Factors Influence the Success of Medial Gastrocnemius Flaps in the Treatment of Infected TKAs?" by Tetreault and colleagues available at: DOI: [10.1007/s11999-015-4624-z](https://doi.org/10.1007/s11999-015-4624-z).

The author certifies that he, or any member of his immediate family, has no funding or commercial associations (eg, consultancies, stock ownership, equity interest, patent/licensing arrangements, etc.) that might pose a conflict of interest in connection with the submitted article.

All ICMJE Conflict of Interest Forms for authors and *Clinical Orthopaedics and Related Research®* editors and board

CORR Insights

wound defects, treated with a single-surgical and antibiotic algorithm. Publication of a large single-surgeon series from a referral center is likely required. In this way, it may become clearer which host and wound factors are likely to contribute to the success or failure of such flaps and eliminate confounding variables. This information

could be used to potentially prevent flap surgery, which is likely to fail and facilitate a more direct path to fusion or amputation in appropriate cases.

References

1. Galat DD, McGovern SC, Larson DR, Harrington JR, Hanssenn AD, Clarke DH. Surgical treatment of early wound complications following primary total knee arthroplasty. *J Bone Joint Surg Am.* 2009;91:48–54.
2. Suda A, Cieslik A, Grutzner P, Munzberg M, Hepert V. Flaps for closure of soft tissue defects in infected revision knee arthroplasty. *Int Orthop.* 2014;38:1387–1392.