

A Retrospective Cohort Study of Postoperative Blood Loss With or Without Intra-Articular Drainage in Total Knee Arthroplasty

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Purpose/Hypothesis:

Excessive postoperative bleeding after total knee arthroplasty (TKA) increases transfusion risk, hospital stay, and cost. Intra-articular drainage has been widely used to reduce hematoma formation, but its benefit remains controversial. This study aimed to evaluate whether omitting drainage reduces blood loss and related complications following TKA.

Methods:

We retrospectively reviewed 196 patients who underwent primary unilateral TKA between 2019 and 2023 at a single institution. Ninety-seven patients underwent TKA with intra-articular drainage (before March 2021), and ninety-nine without (from April 2021 onward). Patients with postoperative hemoglobin elevation or requiring transfusion were excluded from blood-loss analysis. Estimated total blood loss (EBL) was calculated using Nadler's formula based on pre- and postoperative hemoglobin values. Secondary o...

Results:

The mean EBL was 803 mL in the drainage group and 473 mL in the non-drainage group ($p < 0.01$). Transfusions were required in 10 patients (10.3%) with drainage and in none without drainage ($p < 0.01$). There were no significant differences in DVT or infection rates between groups. Hospital stay did not differ significantly.

Conclusions:

Omitting intra-articular drainage during TKA significantly reduced postoperative blood loss and eliminated the need for transfusion without increasing other complications. This approach may represent a simple and effective strategy for perioperative blood management in TKA.

Clinical Relevance:

Routine use of intra-articular drainage after TKA may be unnecessary and could contribute to avoidable blood loss. Eliminating drainage can simplify postoperative care, lower transfusion risk, and potentially improve patient recovery.

Future Direction:

A prospective, randomized multicenter trial is warranted to validate these findings and further determine the optimal blood management protocol for TKA.

Keywords: Total knee arthroplasty, drainage, blood loss, transfusion, retrospective study