SURGERY CASE REPORTS INTERNATIONAL

OPEN ACCESS

Editorial

Compiled Date: November 11, 2026

Abdominal – Thigh Interference as a Technical Limitation in Robotic - Assisted Total Knee Replacement Surgery

Raviraj A[1*], Abhishek Sugumar K[1] and Trishul M[2]

[1]Department of Orthopaedic Surgery, Apollo Hospital, India

[2]Department of Anaesthesia, Apollo Hospital, India

[*]**Corresponding author**: Raviraj A, Department of Orthopaedic Surgery, Apollo Hospital, BG road, Bangalore, India

Editorial

A Robotic-assisted total knee replacement surgery is reliant on a stable optical tracking system and minimal limb movement for accurate bone resection. Patient habitus introduces a technical challenge that is not readily apparent during pre-operative planning.

We report the case of a 63-year-old woman with a short and obese body habitus with bilateral grade 4 osteoarthritis of the knee. She was planned for bilateral staggered TKR using the CUVIS robotic system. The first surgery was performed under spinal anesthesia using a routine medial parapatellar approach; abdominal-thigh contact and longitudinal excursion of the abdomen caused excessive movement of the operative limb. Although the femoral tracker pins remained secure and stable, the movement prevented the robotic system from proceeding with planned bone cuts. The robotic workflow was abandoned, and the surgery was completed using conventional instrumentation.

The contralateral TKR was performed after 2 days under general anesthesia. The diaphragmatic abdomen movement during spontaneous ventilation was overcome by controlled ventilation under general anestheisa during bone resection, reduced abdominal-thigh interference and allowed for successful robotic-assisted TKR.

This case illustrates how patient body habitus can compromise robotic-assisted TKR by actual limb movement, even when the tracker pins remain intact. Preoperative assessment of body habitus, appropriate modification in positioning, multidisciplinary anesthetic planning, and readiness to convert to conventional instrumentation are important considerations. Controlled mechanical ventilation may help reduce such technical difficulties in selected patients abdominal

interference, although this observation alone cannot establish causation.

Citation of this Article

Raviraj A, Abhishek Sugumar K and Trishul M. Abdominal – Thigh Interference as a Technical Limitation in Robotic -Assisted Total Knee Replacement Surgery. Surg Case Rep Int. 2026;9(11):2001-2002.

Copyright

©2026 Raviraj A. This is an Open Access Journal Article Published under **Attribution-Share Alike CC BY-SA 4.0**: Creative Commons Attribution-Share Alike 4.0 International License. With this license, readers can share, distribute, and download, even commercially, as long as the original source is properly cited.