

# **A Novel Technique for UKA via Transverse Skin Incision with Subvastus Approach and Robotic Navigation**

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## **Background**

Unicompartmental knee arthroplasty (UKA) with longitudinal skin incision can lead to transection of the infrapatellar branch of the saphenous nerve (IPBSN) with subsequent numbness and discomfort. Moreover, hypertrophic scar along a vertical incision can lead to stiffness and pain with terminal flexion. Transverse skin incision along Langer's line for UKA has potential to reduce complications. In this study, we present a case series of patient undergoing a novel technique for UKA via a transverse skin incision with subvastus surgical approach and robotic navigation.

## **Methods**

The transverse incision subvastus approach technique was developed and refined in sequential cadaver studies. Patients undergoing medial UKA were given the option to have traditional approach or the novel approach. There were six patients who underwent UKA the novel surgical approach. Postoperatively, these patients were evaluated for (1) hypoesthesia or numbness; (2) knee range of motion (ROM); (3) 6-week postoperative KOOS, JR. Skin sensation was measured using a visual survey that allowed patients to identify areas of numbness or hypoesthesia on the surface of the operative knee. Postoperative radiographs were evaluated for implant fixation.

## **Results**

At 6 weeks postoperatively, all patients demonstrated excellent local skin sensitivity with no patients having any area of numbness and 1 patient reporting pain around the incision area at 5 of 120 tested on the knee. Mean ROM at 6 weeks postoperative was 113.0 degrees ( $\pm 15$ ) with no patients having pain with terminal flexion. Mean preoperative KOOS, JR was 47.92 ( $\pm 4.93$ ) and mean KOOS, JR was 65.46 ( $\pm 12.75$ ) at 6 weeks postoperatively ( $P=0.05$ ). Radiological results demonstrated excellent implant fixation, there were no complications/reoperations.

## **Conclusion**

This demonstrates feasibility of a novel technique for UKA via a transverse skin incision. Patients experienced excellent early outcomes. Future studies should include more patients at longer followup to determine the potential benefit of this technique.

