

Novel Modified Lateral Skin Incision Impacts on the Incidence of Injury to the Infrapatellar Branch of the Saphenous Nerve and the Ability in Daily Movement in Total Knee Arthroplasty

Yusuke Horita¹, Kazunori Hino², Tatsuhiko Kutsuna, Kunihiro Watamori², Tomofumi Kinoshita³, Takashi Tsuda³, Setsuya Kamei, Masaki Takao³

¹Minami Matsuyama Hospital, ²Ehime University, ³Ehime University Graduate School of Medicine

INTRODUCTION:

Injury to the infrapatellar branch of the saphenous nerve (IPBSN) following total knee arthroplasty (TKA) can lead to anterior knee pain and have negative effects on clinical outcomes. The purpose of this study was to investigate the incidence of IPBSN injury with different skin incisions and assess its clinical effect.

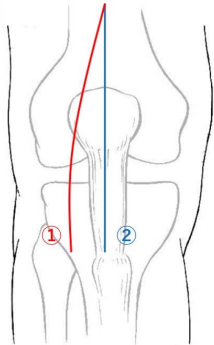
METHODS:

In this study, 163 knees underwent TKA were assessed; with 83 knees in the modified lateral skin incision (ML) group and 80 knees in the mid-line incision (MI) group. In the ML group, patients were treated with a curved incision starting 3cm proximal to the upper pole of the patella and ending laterally to the tibial tuberosity. The surgical techniques other than skin incision were identical in both groups. We assessed the incidence of IPBSN injury and also evaluated patient satisfaction scores in the 2011 Knee Society Scores (KSS), as well as the ability to kneel and squat at 6 months following TKA.

RESULTS: No severe complications were observed in either group. The incidence of IPBSN injury was 19% in the MI group and 6.0% in the ML group ($p=0.01$). Patient satisfaction score was statistically higher in the ML group ($p<0.05$). Kneeling was possible in 26% of the MI group and 47% of the ML group, while squatting was possible in 41% of the MI group and 64% of the ML group, with both activities significantly higher in the ML group ($p<0.05$).

DISCUSSION AND CONCLUSION:

The incidence of IPBSN injury was significantly lower in the ML group compared to the MI group. Moreover, the modified lateral skin incision improved the kneeling and squatting abilities compared with conventional skin incision. The result of this study highlighted the importance of the selection of the skin incision to improve clinical outcomes in TKA.



① modified lateral incision

② midline incision