High tibial medial opening wedge osteotomy and ligament reconstruction for varus angulated anterior cruciate ligament deficient knee

Thesis
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By
Ahmed Mohamed Mohamed El-nokeety
M.Sc. Orthopaedic Surgery
Faculty of medicine, Cairo University

Supervised by
Prof DR.
Ahmed Amin Galal
Chairman and professor of orthopedic surgery
Faculty of medicine, Cairo University

Prof DR.
Ashraf Nehad Moharram
Professor of orthopedic surgery
Faculty of medicine, Cairo University

Dr
Waleed Reda Mohamed
Lecturer of orthopedic surgery
Faculty of medicine, Cairo University

Faculty of medicine
Cairo University
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بســـــم الله الرحمن الرحيـــــم

((قالوا سبحانك لا علم لنا إلا ما علمتنا
إنك أنت العليم الحكيم))

الآية (32) سورة البقرة

صدق الله العظيم

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Dedication

I dedicate this work to my family especially to my dear father who gave me support, soul of my mother and to my loving wife who always shows so much care, aid and patience.

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Abstract

This prospective study was carried out from March 2012 to January 2014, included 20 patients. The patients' age ranged between 18-40 years, all were males, most injuries were sports injury and all of them suffered from chronic ACL insufficiency with varus deformity. All patients underwent simultaneous arthroscopic ACL reconstruction and medial opening wedge high tibial osteotomy (HTO) using T-locked plate and wedge bovine xenograft.

Clinical outcomes were assessed with the Subjective IKDC score, IKDC ligament standard evaluation form, Lysholm knee scoring system and KT-1000 arthrometer. Preoperatively, MRI and x-ray were used for ACL diagnosis and for measuring degree of varus, the standing hip knee ankle angle (HKA°**,** alignment), posterior tibial slope (PTS), lateral joint opening and degree of arthritis. Postoperative x-rays were done to evaluate deformity correction, union, fixation devices and tunnels position. All patients were followed up at 2 weeks and at 1, 3, 6, 12 and 18 months (average 12 ± 3.5 months) postoperatively. Clinical outcomes were assessed preoperatively and at 12± 3.5 months post-operatively.

All clinical scores improved significantly after surgery. The mean IKDC subjective score went from 42.9 points (range 34.2 to 57.7 points), preoperatively, to 79.2 points (range 72 t0 95 points) at the end of follow up. Also, the final IKDC ligament evaluation showed marked improvement in both subjective and objective criteria, with 85% of patients were normal or near-normal. Moreover, 75% of patients had excellent knee function and 25% had good knee function according to Lysholm score. The anterior laxity of the patients' knee was also improved after surgery as 90% of patients were considered normal or near normal according to KT-1000 arthrometer measurement. Varus deformity was also improved after

surgery as the mean HKA angle improved from 10.65° varus to 0.6° varus; with 60% of the patients showed normal alignment. Also, postoperatively all patients had mild lateral joint opening and the posterior tibial slope was slightly increased after surgery (from 6.06° to 6.32°). 80% of the patients returned to their preinjury level of activity at the end of the follow-up period. Postoperative complications were few and mild, and were easily managed.

It could be concluded that performing simultaneous arthroscopic ACL reconstruction and medial opening wedge high tibial osteotomy (HTO) using locked plate and wedge bovine xenograft was effective for obtaining a satisfactory correction angle, good clinical outcomes and lower complication rate.

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