MID TERM OUTCOME OF OPEN WEDGE HIGH TIBIAL OSTEOTOMY AT ORTHOPAEDICS DEPARTMENT OF DMCH, LAHERIASARAI, BIHAR

Orthopaedics

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ABSTRACT

Introduction: High tibial osteotomy (HTO) is a common surgical technique for isolated medial compartment osteoarthritis of tibio-femoral component of knee, indicated in young and active patients with varus deformity. It can be performed by lateral closed wedge osteotomy, medial open wedge osteotomy and dome osteotomy. Purpose of this study was to evaluate the (1) Incidence and severity of complications after medial open wedge osteotomy, (2) functional outcome, (3) survival rate of HTO, (4) incidence of revision to TKR.

Materials And Methods: We have evaluated 32 knees in 27 patients operated during last 3 years (August 2016 to July 2019) who have undergone **Medial open wedge HTO** for Unicompartamental (medial) OA of knee. The indications for surgery were medial compartment osteoarthritis with varus deformity of knee, young and active patients with age < 55yrs, progressive symptoms unresponsive to conservative treatment for at least 6 months, >90° of flexion, flexion contracture <10°, intact cruciates and collaterals. Post-operatively, patients were followed up every month till bony union, thereafter every 3 months for 1yr post-surgery, at final follow-up and were evaluated for the complications and the functional outcome using HSS knee score.

Results: The mean duration of bony union was 12 weeks (10-16). All the pre-operative range of movements was retained post-operatively. HSS knee score has increased significantly following medial open wedge HTO. 5 year-survival rate was 100% and 10 year-survival rate was 87.5%. Four patients were revised to total knee replacement (12.5%). In our study, overall complication rate was 10.93%.

Conclusion: Success of arthroplasty in recent decades has degraded HTO lately, but HTO is still a viable option for young and active patients with medial compartment osteoarthritis of knee with varus deformity, with flexion >90°, with flexion contracture < 10°. It is less expensive and no changes in lifestyle are required which is very useful in Indian perspective. It retains all the pre-operative movements and helps in delaying total knee arthroplasty.

KEYWORDS

High Tibial osteotomy, Medial open wedge HTO, Survival rate of HTO, Revision to TKR, Tibial slope in Open wedge HTO, Complications in open wedge HTO

INTRODUCTION

High tibial osteotomy (HTO) is most commonly used in the treatment of isolated osteoarthritis of the medial compartment of the knee. Treatment for osteochondritis dissecans and condylar osteonecrosis are less common indications. It is mainly indicated in young and active patients with varus deformity of the knee. HTO changes the load distribution across the knee from diseased medial compartment to healthy lateral compartment by which it reduces the pain, slows degenerative process and delays the requirement of Total knee replacement. It may be performed using lateral closed wedge osteotomy, medial open wedge osteotomy and dome osteotomy. Purpose of this study was to evaluate the (1) Incidence and severity of complications after medial open wedge osteotomy, (2) functional outcome, (3) survival rate of HTO, (4) incidence of revision to TKR.

MATERIALS AND METHODS

This study was conducted at Orthopaedic Department of Darbhanga Medical College and Hospital, Laheriasarai, Bihar. We evaluated 32 knees in 27 patients operated during last 3 yrs (August 2016 to July 2019) who have undergone Medial open wedge HTO for Unicompartamental (medial) OA of knee. The indications for surgery were medial compartment osteoarthritis with varus deformity of knee, young and active patients with age <55yrs, progressive symptoms unresponsive to conservative treatment for at least 6 months, >90° of flexion, flexion contracture <10°, intact cruciates and collaterals. Patients with symptomatic osteoarthritis involving lateral compartment of knee and smokers were excluded from the study. The study included 20 women and 7 men with a mean age of 47 years (39 to 52). The mean follow-up was 48 months (28 to 120).

Pre-operative templating was done according to the method described by Dugdale, to shift the weight bearing axis from medial to lateral compartment by doing overcorrection of 3-5°, above 7° of normal valgus. Standard surgical technique was followed with midline incision in view of future revision to TKR. Iliac crest bone graft was

used in the open wedge and was fixed with T-buttress plate on antero-medial surface of the tibia.

Post-operative rehabilitation: Static quadriceps and active ankle exercises were started immediately after surgery. Patellar mobilization, straight leg raises and active quadriceps exercises were started on second post-operative day. Partial weight bearing was allowed at 6 weeks and full weight bearing at 12 weeks post-operatively.

Follow-up visits: Patients were followed up every month till bony union, thereafter every 3 months for 1yr post-surgery, at final follow up and were evaluated for the complications and the functional outcome. At each visit, the range of movement was measured using a goniometer and functional assessment was performed using the Hospital for Special Surgery (HSS) knee score. Radiological evaluation was done on 1st and 12th post-operative day and then monthly till bony union and at final follow-up. Radiological evaluation was done for loss of correction, failure of fixation, fracture of the tibial plateau and non-union at each visit.

RESULTS

From August 2016 to July 2019, 32 knees in 27 patients were treated with Medial open wedge HTO for Unicompartamental OA of knee. The study included 20 women and 7 men with a mean age of 47 years (39 to 52); with right sided predominance (right in 14, left in 8 and bilateral in 5 patients). The mean follow-up was 48 months (28 to 120). The mean duration of bony union was 12 weeks (10-16) and mechanical axis in valgus at final follow-up was 3° (1°-5°). Post-operatively tibial slope has increased which maintained till final follow-up. All the pre-operative range of movements was retained post-operatively. HSS knee score has increased significantly following medial open wedge HTO (Table I).

In our study, overall complication rate was 10.93% in which 1 had