

High Tibial Osteotomy Delays Progression to Knee Replacement by 10 Years: A Prospective 20-Year Outcome Study

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INTRODUCTION: High tibial osteotomy (HTO) is a successful joint preserving procedure for the treatment of medial compartment osteoarthritis. Long-term survivorship of HTO ranges from 40-85%. Success of HTO and survivorship beyond 10 years is rarely reported, and no published studies have included a prospective large cohort with a minimum of 20 years follow up after HTO.

METHODS: A total of 100 consecutive patients with medial bone-on-bone arthritis were prospectively studied over 20 years to provide long term patient-reported outcome measures (PROMS) after HTO and determine the time to failure. Failure was defined as conversion to knee arthroplasty, or revision HTO. The ideal candidate was defined as baseline age <55 years, BMI <30, and a WOMAC score of 45 or more.

RESULTS: At 20 years, 95 patients were available for follow up. Overall survivorship of HTO was 77%, 63%, and 44% at 10, 15, and 20 years respectively. The significant factors that improved survivorship were age < 55, BMI <30, and Western Ontario and McMaster University Osteoarthritis Index (WOMAC) > 45. In the ideal candidate, survivorship was 97% at 10 years, after which there was a gradual decline to 60% survival at 20 years. Of those surviving, 97% reported satisfaction with surgery, with a mean KOOS Pain score of 91, and function score of 97.

DISCUSSION AND CONCLUSION:

Overall HTO survival was 44% at 20 years. Survivorship in the ideal patient was 97% at 10 years and 60% at 20 years. HTO may not permanently avoid the need for TKA, but in well selected patients it can delay the need for TKA until an age where longevity can be expected. The ideal patient for HTO has an age less than 55, a BMI less than 30, and a WOMAC score of 45 or more. HTO is therefore a successful method to treat medial compartment OA as well as prevent premature

TKA in those who may have poorer risk of TKA longevity.

