

Paper #60

Opening Wedge High Tibial Osteotomy - The Effects of Body Mass Index on Early Clinical Results.

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Summary:

Obese patients (BMI >30) have worse Oxford and KOOS scores prior to opening wedge high tibial osteotomy, than their normal weight (BMI 20-25) and overweight (BMI 25-30) peers but similar results at 12 months post-surgery.

Abstract:

Introduction:

High body-mass-index (BMI) is increasingly prevalent and it is reported to have a negative predictive effect in patients undergoing opening-wedge-high-tibial-osteotomy (OWHTO). This study evaluates the effect of BMI on early clinical results (12 months) of patients having this procedure.

Methods:

A consecutive series of 121 patients undergoing OWHTO were included and divided into three groups according to their BMI. Twenty three patients were normal weight (BMI 20-25, 11 females, mean age 39); 52 overweight (BMI 25-30, 8 females, mean age 42) and 46 obese (BMI >30, 13 females, mean age 44). Osteotomies were planned following long-leg alignment films, using digital software and plate fixation performed. Oxford knee and KOOS scores were performed pre-operatively and at 12 months post-operatively in a dedicated physiotherapy clinic. Statistical analysis (one-way ANOVA, with Tukey's post-test and paired t-test) was performed using GraphPad Prism (California, USA).

Results:

Pre-operative KOOS scores were significantly worse in obese patients (mean 39.9, SD 18.2, $p < 0.05$) when compared with those of normal-weight (mean 58.8 SD 20.6), or overweight (mean 50.3, SD 18.3). Obese patients also had significantly worse pre-operative Oxford scores (mean 22.4, SD 8.5, $p < 0.05$) when compared with normal-weight patients (mean 31.3, SD 10.6), although no difference was seen with the overweight group (mean 26.5, SD 9.5). All groups showed improvement in KOOS and Oxford scores post-operatively with normal-weight patients improving to a mean of 73.5 (SD 15.2, $p < 0.02$) and 38.1 (SD 8.4, $p < 0.08$); overweight patients improving to a mean of 71.1 (SD 15.4, $p < 0.0002$) and 36.8 (SD 8.7, $p < 0.0004$); and obese patients improving to a mean of 71.0 (SD 17.8, $p < 0.0001$) and 37.5 (SD 7.6, $p < 0.0001$) respectively. No significant differences were seen between the different groups when comparing post-operative KOOS or Oxford scores. Overall, there were two DVTs (one normal-weight, one overweight); two delayed unions (one overweight, one obese); and two infections (obese group, one deep).

Conclusion:

Only 19% of patients were of normal weight. Pre-operatively, obese patients had worse KOOS and Oxford scores when compared to overweight and normal-weight peers. Patients had improved at 12 months following surgery,

ISAKOS

**International Society of Arthroscopy, Knee Surgery and
Orthopaedic Sports Medicine**

9th Biennial ISAKOS Congress • May 12-16, 2013 • Toronto, Canada

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irrespective of their weight. These early results support the use of OWHTO in patients with high BMI but further study is required at more distant time-points to ensure this observation is maintained.