



Operative Management of Adult Spinal Deformity Results in Significant Increases in QALYs Gained Compared to Nonoperative Management: Analysis of 479 Patients with Minimum 2-year Follow-up

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Introduction

Operative management of ASD repeatedly demonstrates improvements in HRQOL over nonoperative treatment. However, little is reported regarding the quality-adjusted-life-year (QALY) improvements following surgical correction of ASD. The purpose of this study was to evaluate the QALY increases following the operative treatment of ASD compared with nonoperative treatment.

Methods

Inclusion criteria: =18yrs, ASD. Health utility values were calculated from SF6D scores and used to calculate QALYs gained or lost at minimum 2 years from the baseline utility value. A subanalysis was conducted on the available patients in the cohort with complete 1, 2, and 3-year SF36 scores to establish a trend in QALY changes.

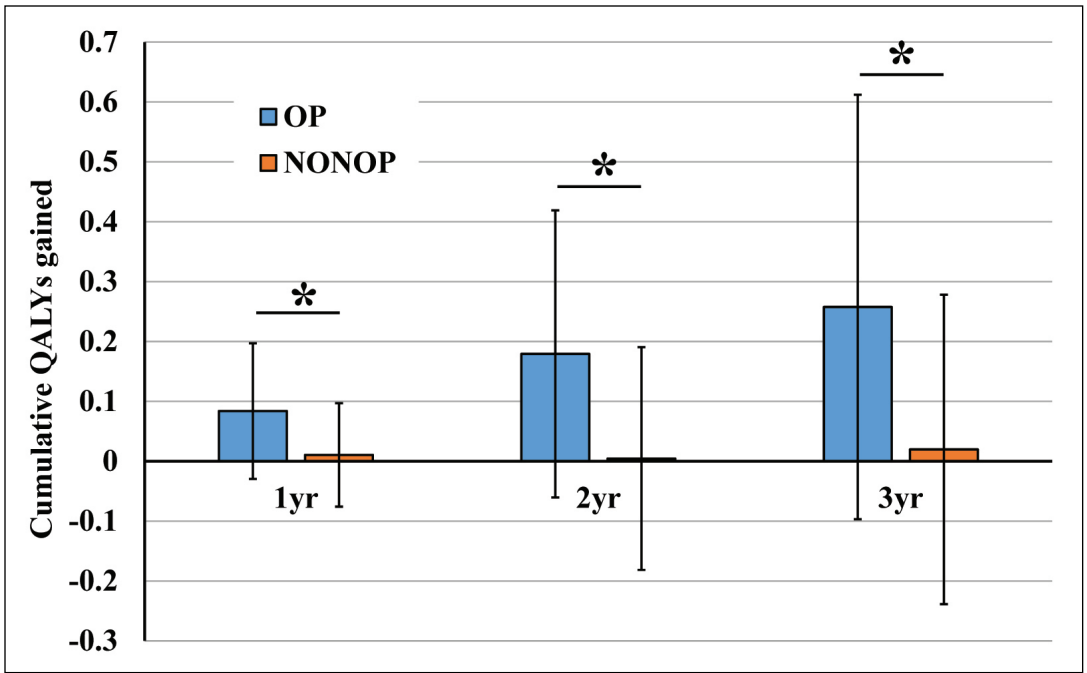
Results

365 op and 469 nonop patients were eligible for 2-year follow up and 479 patients were included (OP:258 (70.7%), NONOP:221(47.1%). OP had significantly worse health utility values (0.545 ± 0.118 vs 0.657 ± 0.114 , $p<0.0001$), and larger QALY gained (0.139 ± 0.253 vs -0.004 ± 0.209 , $p<0.0001$). OP had lower QALY at min 2ys (1.28 ± 0.330 vs 1.39 ± 0.374 , $p=0.0014$). 179 patients (OP:106, NONOP:73) had complete 1,2, and 3yr SF36 scores and were included in the subanalysis. Of these patients, both groups had statistically similar mean QALYs at all time points (OP vs NONOP, $p>0.05$): 1yr (0.648 ± 0.102 vs 0.645 ± 0.090), 2yr (1.32 ± 0.232 vs 1.27 ± 0.204), and 3yr (1.97 ± 0.379 vs 1.93 ± 0.303). OP patients had a significantly larger increase in QALYs (from baseline) at

1, 2, and 3 years compared with NONOP (Figure): 1yr (0.084 ± 0.113 vs 0.011 ± 0.086 , $p<0.0001$), 2yr (0.179 ± 0.240 vs 0.005 ± 0.186 , $p<0.0001$), and 3yr (0.258 ± 0.354 vs 0.020 ± 0.258 , $p<0.0001$).

Learning Objectives

By the conclusion of this study, participants should be able to: 1) understand the significant increase in QALYs gained postoperatively for ASD patients compared with nonoperative treatment, 2) discuss the differences in outcomes for operative and nonoperative treatment.



Conclusions

The operative treatment of adult spinal deformity results in significant increases in QALYs gained at minimum 2yrs postop as well as at the 1-, 2-, and 3-yr time points compared to nonoperative management.