

Title: Back pain and quality of life 10 years after segmental pedicle screw instrumentation for adolescent idiopathic scoliosis (AIS). Comparison to age and gender matched untreated AIS patients and healthy controls.

Introduction:

Posterior spinal fusion with pedicle screws is the standard treatment for AIS, although it remains unclear whether this procedure results in improved long-term health related quality of life (HRQoL) compared with patients untreated for AIS. The aim of the present study was to evaluate pain and HRQoL in surgically managed patients with a minimum follow-up of 10 years compared with patients with untreated AIS and a healthy control group. Purpose of the study: We hypothesized that posterior spinal fusion with pedicle screw instrumentation would result in improved pain and health-related quality of life (HRQoL) domains as compared with untreated AIS patients. Materials and Methods:

64 consecutive patients, minimum follow-up 10 years (mean 12.1), who underwent posterior pedicle screw instrumentation for AIS by a single orthopedic surgeon were prospectively enrolled. 51 (80%, 8 boys, mean age at FFU 27.0 [2.0] years) patients completed Scoliosis Research Society (SRS)-24 questionnaires, underwent clinical examination and standing spinal radiographs. Data on reoperations were collected. Pain and HRQL were compared with those of 51 age and sex-matched patients with untreated AIS (mean major curve 32° [13°] at skeletal maturity, mean age 26.4 [4.2] years at FFU) and 51 healthy controls (mean age at FFU 27.6 [6.1] years). Results Mean (SD) major curve was 57 (8.4) degrees preoperatively and 15 (6.3) degrees at FFU. Two (3.9%) re-operations were needed. The SRS-24 pain, self-image, function and activity remained at high level from preoperative to 10-year follow-up ($p > 0.10$ for all changes). Pain, general activity and total scores were significantly better at 10-year follow-up in the surgically treated patients as compared with untreated patients ($p \leq 0.05$ for all) (Table 1). In contrast untreated patients had better function scores ($p = 0.024$). Healthy controls had significantly higher score than surgically treated at FFU. Conclusion Patients undergoing segmental pedicle screw instrumentation for AIS maintain high level HRQoL during 10-year follow-up. Their HRQoL was significantly better than in untreated AIS, except for function domain.

