



Learning curve of adult spinal deformity surgery – a retrospective cohort study in three Norwegian University Hospitals

Vinjar Hansen, MD ^{1,2}, Stephan Röhl MD, PhD^{1,3}, Christian Hellum MD, PhD^{1,3},
Thomas Kibsgård MD PhD^{1,3}

¹Oslo University Hospital, Oslo, Norway

²University of Bergen, Bergen, Norway

³University of Oslo, Oslo, Norway

Background

Adult deformity surgery (ADS) is complex surgery and these patients have not been included in the Norwegian spine registry before 2020. We wanted to evaluate the early experiences for adult deformity surgery in three Norwegian University hospitals in the 10 years before the national prospective registration started. The aim were to describe the heterogeneity of patients with degenerative spinal deformity and fracture sequela and the choice of correctional technique. Secondly, evaluate complication rate, revision rate and reason for revision surgery. Thirdly, evaluate the outcome after surgery with PROMS and radiological data.

Methods

We included patients ≥ 20 years of age, with a correction ≥ 20 degrees and operated from 2009-2019. The patients answered PROMS 3-10 years after index surgery. Journal data and x-rays were collected with a minimal follow up of 5 years.

Results

We identified 85 patients, 58/85 (68 %) were degenerative deformities, 27/85 (32 %) fracture sequela. Pedicle subtraction osteotomy 41/85 (PSO, 48 %) and Ponte Osteotomy 25/85 (PO, 29 %) were the main correction techniques. The reoperation rate was 45/85 (53 %) within the first 5 years and the rate decreased during the 10 year period. Infection, proximal and distal junctional failure was the major cause of re-operation. The PROMS reply rate was 61/85 (72 %) and 36/61 (59 %) reported a satisfactory result. The mean ODI was 38.5 (95% CI= 33.2, 43.9), NRS back pain 4.1 (95% CI= 3.4, 4.7) and leg pain 2.9 (95% CI= 2.1, 3.6) after surgery. The PI/LL mismatch were still 54/66 (82%) 12 months after surgery.

Conclusion

ADS surgery is complex and has a long learning curve with a high rate of re-operations and complications. Systematic prospective registration and surveillance is needed in the future.

Disclosure

No Disclosures.