Spinopelvic Fixation using Iliac Screws for Adult Spinal Deformity: Radiographic and clinical analysis of 100 patients

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Objective: Iliac screws are a biomechanically sound method for deformity correction and stabilization of a long multi-segment lumbar constructs, which are instrumented down to S1. There is disagreement about complications and the effect on the fusion rate. The aim of the study is to analyse the safety and outcome of iliac screws.

Materials and methods: All patients with fusion of more than 4 segments and bilateral S1 and iliac screws were included in this retrospective study. The additional inclusion criteria were postoperative radiographic follow-up with x-ray after 6 months and one year. Screw loosening was determined by the appearance of radiographic halo zone sign around the screw. Bony fusion was investigated by CT scans. Exclusion criteria were spinopelvic fixation for diseases other than deformity

Results: The data of our 100 patients show a low revision rate of 4% for Pseudarthrosis and 2% for prominences of the iliac screw heads. There was no lumbar loss of correction. The incidence of iliac screw loosening was 0.5% and the incidence of S1 screw loosening was 2%. Compared to the literature, our data showed similarly good results with regard to revision rates, frequency of non-union and correction losses due to the implantation of ilium screws using the free-hand implantation technique. The radiological analysis showed no influence of the screw length on the results.

Conclusion: Iliac screws for adult patients with spinal deformities were shown to be an effective method of spinopelvic fixation with high lumbosacral fusion rates and low complication rates.

Speaker Biography

Hazem Ahmed is the Head of Spine Surgery Department at St. Augustine Hospital Düren and he is a Specialist in orthopedics and trauma surgery. He did his Master's certificate from the German Spine Society Eurospine. His focus of study is Deformity and scoliosis surgery and the complete range of surgical treatment of spinal diseases .

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