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Long-term Outcome after Lambrinudi Operation in Severe Rigid Equinus Deformity

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Introduction: Patients with severe rigid equinus deformity require corrective osteotomies to achieve a plantigrade foot. One such operation is the Lambrinudi triple arthrodesis. Many of these patients suffer from post-poliomyelitis deformity and have this operation within the first 2 decades of life. However, there is little in the literature describing long-term outcomes of these patients beyond 20 years. The study looked at the outcomes of patients from our centre over 30 years after their operations.

Methods: We traced 16 patients who had Lambrinudi operations at the Duchess of Kent Children's Hospital from 1974 to 1979. The latest outcomes of 10 of these patients were found in the Clinical Management System.

Results: Of these 10 patients, 8 had severe equinus deformity due to post-poliomyelitis deformity. The age at which the Lambrinudi operations were performed ranged from 14 to 24 years. The mean follow-up time was 33 years. Three patients had unlimited function. Four patients had residual pain in the affected foot requiring long-term follow-up, although none required further surgery. Two patients had contralateral mechanical knee pain requiring painkillers and physiotherapy. One patient had deterioration in lower limb power due to his progressive neurological disease resulting in chronic wheelchair use.

Discussion: Most papers in the literature reveal a poor outcome in only a minority of the cases and others focus mainly on radiographic instead of clinical outcome. From our series with follow-up of over 30 years, we found that over half of our patients had residual pain requiring long-term follow-up and treatment.

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One-stage Posterior Navigation-guided Pedicle Screw Instrumentation and Spinal Osteotomy in the Treatment of Spinal Deformities — An Early Experience

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Introduction: Severe spinal deformities often become symptomatic with functional impairment. Navigation-guided pedicle screw instrumentation and haemostasis techniques facilitate spinal osteotomies to be an effective one-stage procedure.

Materials and Methods: We reviewed curve correction and clinical outcomes in 10 cases of severe spinal deformities treated with this technique.

Results: There were 6 males and 4 females including 1 en bloc laminectomy of T3-10 segment and 5 levels interpedicular osteotomy, 1 L2,3 en bloc vertebrectomy for congenital dislocation, and 8 convex thoracic pedicle subtraction osteotomy (3 T5, 1 T7, 2 T9, 2 T12). The mean (range) fusion level was 12.3 (8-15). The mean instrumented level was 8 (6-10) making implant density of 66.3% (46.2-88.9%). The mean operation and instrumentation time were 669 (375-795) and 112 (56-194) minutes, respectively. The mean pre- and post-operative Cobb's angles, as well as percentage correction of upper thoracic curve were 84 (75-101) degrees, 39 (21-50) degrees, and 53% (36-72%), respectively, while for the main thoracic and thoracolumbar curve the values were 67.8 (32-92) degrees, 25 (14-37) degrees, and 61% (46-78%). The main thoracic kyphosis corrected from a mean preoperative Cobb's angle of 65.8 (45-74) to 29.4 (15-42) degrees. The structural lumbar kyphosis corrected from a mean preoperative Cobb's angle of 73.7 (60-75) to 14.7 (12-16) degrees. The mean length of stay was 18 (10-51) days. Complication included 1 case of Horner syndrome. There was no neurological, wound, or implant complications.

Discussion and Conclusion: Navigation-guided instrumentation and spinal osteotomy allow safe and effective correction of the severe rigid deformity.