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## Conservative Treatment for Bony Healing in Pediatric Lumbar Spondylolysis.

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### Abstract

**STUDY DESIGN:** A retrospective review of prospectively collected data.

**OBJECTIVE:** The aim of this study was to investigate recent outcomes of conservative treatment for bony healing in pediatric patients with lumbar **spondylolysis** (LS) and to identify the problems that need to be resolved.

**SUMMARY OF BACKGROUND DATA:** Several diagnostic and therapeutic techniques for LS have been developed recently, leading to better outcomes for bony healing.

**METHODS:** Overall, 63 consecutive pediatric patients (53 boys and 10 girls) with LS (average age: 13.8 years; range: 6-17 years) were analyzed. Diagnosis and staging (very early, early, progressive, and terminal) were based on multidetector computed tomography (CT) scans and magnetic resonance imaging (MRI). For all patients except those with terminal-stage pars defect, conservative treatment included rest, avoidance of sports, and the use of a thoraco-lumbo-sacral-type trunk brace. Follow-up MRI was performed monthly. When the signal changes resolved, CT scans were obtained to assess bony healing.

**RESULTS:** Three patients dropped out during the study period. A total of 60 patients were included (50 boys and 10 girls) in this study (follow-up rate: 95.2%), with 86 instances of LS (very early: 36, early: 16, progressive: 15, terminal: 19) in 65 laminae. In the very early stage, the bony healing rate was 100%, and average treatment period was 2.5 months (range: 1-7 months). In the early stage, the bony healing rate was 93.8%, and the average treatment period was 2.6 months (range: 1-6 months). In the progressive stage, the bony healing rate was 80.0%, and the average treatment period was 3.6 months (range: 3-5 months). The average overall recurrence rate was 26.1%. All patients showing recurrence eventually achieved bony healing.

**CONCLUSION:** High bony healing rates and short treatment periods were observed with conservative treatment in pediatric patients with LS. However, the recurrence rates were relatively high. This issue should be targeted in future studies.

**LEVEL OF EVIDENCE:** 2.

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