

The effect of Luque-rod instrumentation on the sagittal contour of the lumbosacral spine in adolescent idiopathic scoliosis and the preservation of a physiologic lumbar lordosis

Davies AG, McMaster MJ. *Spine* 1992; 17(1):112-115.

The changes in the sagittal alignment of the lumbar spine were investigated in 28 patients with adolescent idiopathic scoliosis undergoing long posterior spinal fusion to L4 or L5 with contoured Luque rods and segmental sublaminar wiring. The lumbar lordosis over the instrumented levels was preserved, and there was no compensatory hyperlordosis of vertebral segments distal to the fusion. In situations where long posterior spinal fusions are indicated, instrumentation with contoured Luque rods and segmental sublaminar wiring can preserve the normal sagittal alignment of the lumbosacral spine.

Growth in girls with adolescent idiopathic scoliosis

Hagglund G, Karlberg J, Willner S. *Spine* 1992; 17(1):108-111.

The height development during childhood and puberty was analyzed in 54 girls with adolescent idiopathic scoliosis by the use of the Infancy Childhood Puberty growth model, which is based on healthy Swedish children. This model adjusts adolescent reference values for height for individual age at pubertal maturation. The scoliotic girls had an above-average height 2 years before the onset of the pubertal growth spurt. However, because they displayed an early pubertal maturation as well as a low pubertal gain in height, their values were only slightly higher than the reference mean values at maturity. The results indicate an increased growth hormone activity in childhood in girls with adolescent idiopathic scoliosis.

Surgical treatment of cervical spondylotic myelopathy: time for a controlled trial

Rowland L. *Neurology* 1992; 42:5-13.

Surgical procedures on the cervical spine are accepted therapies for the myelopathy of cervical spondylosis. However, reported improvement rates vary widely, and many reports indicate improvement in about one-half of the cases. It has not been proven that outcome after surgery is better than the natural history or conservative therapy. Radiographic or imaging evidence of cord impingement or compression may be seen in asymptomatic people. There are no clear guides to the selection of patients who may benefit from the operation and there has been no standardization of preoperative evaluation, trials of conservative therapy, ascertainment of progressive disability, or assessment of outcome. A multicenter controlled trial might answer these questions.

Rib hump and supine angle as prognostic factors for mild scoliosis

Duval-Beaupere G. *Spine* 1992; 17(1):103-107.

A retrospective study was conducted on 262 patients with minor idiopathic scoliosis, having supine angles of less than 30° and rib humps of less than 30 mm at the first examination. The initial radiographic measurement of the Cobb supine angle and rib hump height, recorded during a bending test performed on subjects in a sitting position, was correlated with the rate of scoliosis progression. Scoliosis progression was estimated graphically from an angle diagram established by monitoring untreated patients for 7 months to several years, depending on the rate of progression before treatment. More than 95% of the patients with initial supine angles of more than 17° or rib humps greater than 11 mm suffered from progressive scoliosis. The importance of the size of the supine angle, rib hump height, scoliotic pattern, and state of maturation for the progression rate are analyzed. Knowledge of these parameters can be used to make individual prognoses for approximately 95% of these subjects.

Platelet function in adolescent idiopathic scoliosis

Kahmann R, Donohue J, Bradford D, White J, Rao G. *Spine* 1992; 17(1):145-148.

Recent studies have reported abnormal platelet morphology and function in patients with adolescent idiopathic scoliosis. These abnormalities include increased platelet size and dense body numbers, abnormal aggregation, thromboxane A2 synthesis, serotonin release to adenosine diphosphate and epinephrine stimulus, and decreased myosin-adenosine-triphosphatase - specific activity. It was postulated that a membrane-specific defect in calcium transport may be partially responsible for the abnormalities found. In response to a suggestion in the literature that platelet screening could be clinically useful in scoliosis evaluation as well as in basic research of its pathophysiology, a study was performed to evaluate platelet morphology, biochemistry, and function in patients with adolescent idiopathic scoliosis. Platelets from nine volunteers with adolescent idiopathic scoliosis were compared with cells from a control group of nine patients. No significant differences in measured platelet parameters were noted between adolescent idiopathic scoliosis patients and control groups. Platelets from both groups demonstrated normal aggregation and release patterns with all agents except for a mild decreased aggregation and secretion response to epinephrine. No significant differences were noted in serotonin or adenosine nucleotide levels. No significant ultrastructural differences were noted. Earlier findings of an abnormal aggregation and secretion response to adenosine diphosphate, increased numbers of dense bodies, or increased intracellular calcium could not be confirmed. On the contrary, we found normal, if not slightly decreased, numbers of dense bodies per platelet and calcium levels that were not different from controls.