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Could posturographic parameters predict the evolution of idiopathic scoliosis?
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Introduction.—Frequency of adolescent idiopathic scoliosis (AIS) is important (2%) and prognosis of spine deformation isn’t currently known at the onset of the evolution. Literature describes postural control abnormalities and the aim of the study is to determine which posturographic parameters could predict the evolution of AIS just at the onset of the evolution.

Material and methods.—In a prospective study, 75 patients with AIS (mean age: 11.6 ± 2.0 years) were clinically and radiologically assessed at the time of diagnosis and evaluated in posturography, including static tests (with and without sensory conflict using the availability or the disruption of sensory cues) and dynamic tests. Two groups were formed according to the follow-up of the AIS (progressive AIS and non-progressive AIS).

Results.—Thirty-five patients were included in non-progressive AIS group and 39 patients in the progressive AIS group. At the diagnosis visit, patients of the latter group were younger (12.25 ± 1.93 vs. 11.05 ± 1.95) and displayed higher Cobb angle (17.05 ± 5.43 vs. 12.63 ± 4.75). Patients with progressive AIS displayed higher body sway in static tests in eyes open condition, characterized by a larger sway path travelled by center of foot pressure and by higher anteroposterior oscillations. Progressive AIS patients displayed poorer balance control, mainly in the standard situation (eyes open, stable visual surround and platform), when only the somatosenory cue was disrupted (eyes open, stable visual surround and sway-referenced platform), and when visual and somatosenory cue were disrupted (eyes open, sway-referenced visual surround and platform).

Conclusion.—Posturographic parameters would be able to predict the evolution of AIS, leading to an early treatment.

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Comparative radiological study of the sagittal spinal alignment of 240 adolescents with Scheuermann disease with 100 healthy teenagers
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Keywords: Spinal alignment; Pelvic parameters; Spinal parameters; Scheuermann disease

Objective.—Compare the sagittal spinal alignment of adolescents with spinal growth dystrophy (SGD) with free adolescents without spinal pathology.

Patients, materials and methods.—Two hundred and forty adolescents with SGD (vertebral wedging and/or Schmorl nodes), mean age 14.8 years. Hundred adolescents without spinal pathology, mean age 12.2 years.

Study of the parameters of sagittal spinal alignment on a radiograph performed in standardized conditions. Measurement of lumbo-pelvic parameters (morphology and positioning of the pelvis), spinal parameters, cranio-cervical parameters.

Statistical study with comparison tests average (Student), percentage (Chi 2) and correlations (Pearson). Significance if p < 0.05.

Results.—The mean values of cranial morphology (cranial incidence) and pelvic (pelvic incidence) were not significantly different in both groups. The SGoD group has higher mean values of thoracic kyphosis, lumbar and cervical lordosis (p < 0.0001) than the healthy group. Cervical morphology is significantly different (p < 0.001) in both populations, with 69% of cervical spine lordosis in the SGD population compared to the healthy population (57%). Hundred percent of healthy population is normal pelvic tilt. In the SGD cohort, 54% is paid with normal conditions, 23% with PPXS morphotype (Posterior Pelvic Crossed Syndrome), and 23% with APXS morphotype (Anterior Pelvic Crossed Syndrome). Correlations between sagittal parameters are identical in both groups. The correlation between the angular values of thoracic kyphosis and lumbar lordosis are stronger in the SGD group (r = 0.56, p < 0.001) than in the healthy group (r = 0.36, p < 0.001).

Discussion.—The occurrence of SGD lesions generates changes in type of local kyphosis associated with regional adaptations neighborhood with a call for extension and enhancement of lordosis, responsible for increased mechanical stress. The rehabilitation therapy, orthopedic and surgical must take into account both the local deformation but also of those adaptations.

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