Cephalic stabilization and idiopathic scoliosis

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Keywords: Idiopathic scoliosis; Cephalic repositioning; Cervical Proprioception

Introduction. In idiopathic scoliosis (IS), increase of osteopontin tissue expression [1] due to a defect of melanotin signaling could explain the various oculomotor, vestibular and proprioceptive anomalies. These anomalies can disturb postural control including cephalic stabilization control. Cephalic stabilization is influenced by vestibular, visual, oculomotor, proprioceptive and cervical information and used as a reference to vertical gravity.

Objective. To evaluate the cephalic stabilization in IS, with a validated test: Cephalic Repositioning Test (CRT).

Methods and materials. In this prospective study, we evaluate, in a IS population with an angle Cobb ≥ 15°, cephalic repositioning ability with CRT on a target, eyes closed, after ten right rotation and ten left rotations.

Quantitative and qualitative statistical analysis is performed.

Results. Thirty IS subjects (age 13.5 ± 2.36) were evaluated. Forty percent have a pathological right and left CRT (> 6°). 76.9% have at least one pathological CRT and 61.1% have a pathological left CRT. Higher right lateralization was found significantly after repositioning. Abnormal left CRT is associated with a high angle Cobb lumbar (P < 0.05), and more significant with left convexity lumbar scoliosis (P < 0.05).

Discussion and conclusion. These preliminary results show a disturbance of CRT and indirectly proprioceptive cervical control in IS. Requires further evaluation with a larger number of IS and matched a control group. In this disease, the test systematization is the detection and guidance to a specific rehabilitation: oculo-cervical reprogramming according to Revel’s [2] protocol.

References

http://dx.doi.org/10.1016/j.rehab.2012.07.0704

Cephalic stabilization and idiopathic scoliosis: oculo-cervical reprogramming according to Revel's protocol.

http://dx.doi.org/10.1016/j.rehab.2012.07.703

Intradiscal pressure change induced by a lumbar orthosis

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Keywords: Lumbar orthosis; Intradiscal pressure; Finite element; Low back pain