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The treatment of Hyperkyphosis utilizing the SpineCor® Dynamic Corrective Brace: some preliminary results

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Introduction

Hyperkyphosis has long been reported to be associated with many health disorders, both psychological and patho-mechanical. Very few options for the management of this condition are available in medicine, while conservative treatment like chiropractic and physiotherapy can only offer limited structural rehabilitation. Although originally designed for the treatment of AIS, The SpineCor® Dynamic Brace offers a great variety of options for the treatment of Hyperkyphosis. According to our morphologic classification of hyperkyphotic thoracic curves: Upper Thoracic (UT) (often associated with an anterior thoracic translation relative to pelvis), mid-thoracic (MT) (often associated with hyperlordosis and no significant ribcage translation), and lower thoracic (LT) (often associated with posterior translation of ribcage). Many combinations of brace fittings have been designed for the creation of vectors that create a specific corrective movement for the patient's spine and posture.

Methods

Sixteen adult hyperthoracic kyphotic patients, 12 males and 4 females (aged 19 to 81 years), were fitted with a SpineCor Dynamic Brace according to the morphology of their curves: UT (6 patients), MT (4 patients), and LT (6 patients). Postural comparative evaluation was made with PosturePrint® software which provides a Posture Index, and radiologic measurements were made with a posterior tangent method using segmental angles and then compared to the Harrison Sagittal Spinal Model (HSSM).

Results

The UT group received significant pain relief from 2.4 to 1/10, while their posture index went from 15.3 to 12.2. Pain in the MT group decreased from 3.75 to 2/10, while the posture index was reduced significantly from 17.75 to 12.75. The LT group seemed to benefit the most from the brace, as their overall pain decreased from 5.7 to 2.2/10, although their posture index actually increased slightly from 14.7 to 17.3. Although their overall sagittal balance was better, none of these groups benefited from a significant change in their thoracic lateral curve, as is to be expected in adults.

Discussion

These results suggest that the treatment of adult thoracic hyperkyphosis with the SpineCor® Dynamic brace appears to be promising. It should imperatively be applied to younger patients who have the potential to grow out of their deformity.