

소아재활

게시일시 및 장소 : 10 월 19 일(토) 08:30-12:30 Room G(3F)

질의응답 일시 및 장소 : 10 월 19 일(토) 11:00-11:30 Room G(3F)

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Effect of FLEXPine brace on spinal alignment, pain and quality of life in neuromuscular scoliosis

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Background

Progressive scoliosis is common in patients with neuromuscular diseases (NMD). Severe scoliosis limit the cardiopulmonary function, the sitting balance, appearance and the quality of life and their incidence is more than 80% of patients with neurologic and NMD.¹ Scoliosis becomes worse as it grows and progresses from flexible form to fixed deformity in NMD patients. However, the management of neuromuscular scoliosis is unclear, and previous studies have reported controversial results of traditional thoracolumbar brace for neuromuscular scoliosis.²⁻⁴ Thus, the aim of this study was to prove the effect of novel flexible thoracolumbar brace (FLEXPine brace) on Cobb's angle of scoliosis, pain and quality of life in patients with neuromuscular scoliosis.

Methods

Twelve patients with neuromuscular scoliosis who ranged from three to eighteen years were participated (age = 10.78, height = 111.27 cm, weight = 21.87 kg). Experimental group wore FLEXPine brace for 6months (Fig 1.). We also used Cobb's angle of patients visited from 2014 to 2016 (n=3). As clinical parameters, visual analog scale (VAS), likert scale and Muscular Dystrophy Spine Questionnaire (MDSQ) were used. To compare the differences of Cobb's angle, VAS and MDSQ between before and after wearing FLEXPine brace, paired t-test was used. The progression of neuromuscular scoliosis between experimental group and control group was analyzed by Mann-Whitney U test.

Results

The Cobb's angle was significantly decreased immediately after wearing FLEXPine brace ($p = 0.004$) (Fig 2.). However, Cobb's angle (Fig 2.), VAS and MDSQ did not show significantly differences between before and 6months after wearing FLEXPine brace ($p=0.093$, $p=0.929$, respectively). The progression of Cobb's angle between experimental group and control group also did not have significant difference ($p=0.229$).

Conclusion

The FLEXPine brace palliated Cobb's angle immediately after NMD patients wore the brace. As FLEXPine brace significantly decreased Cobb's angle and is easier to wear than the conventional thoraco-lumbo-sacral orthosis, daily application of FLEXPine during growing period is expected to reduce the degree of fixed deformity in the long-term follow up.

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Fig 1. The condition with FLEXPine brace

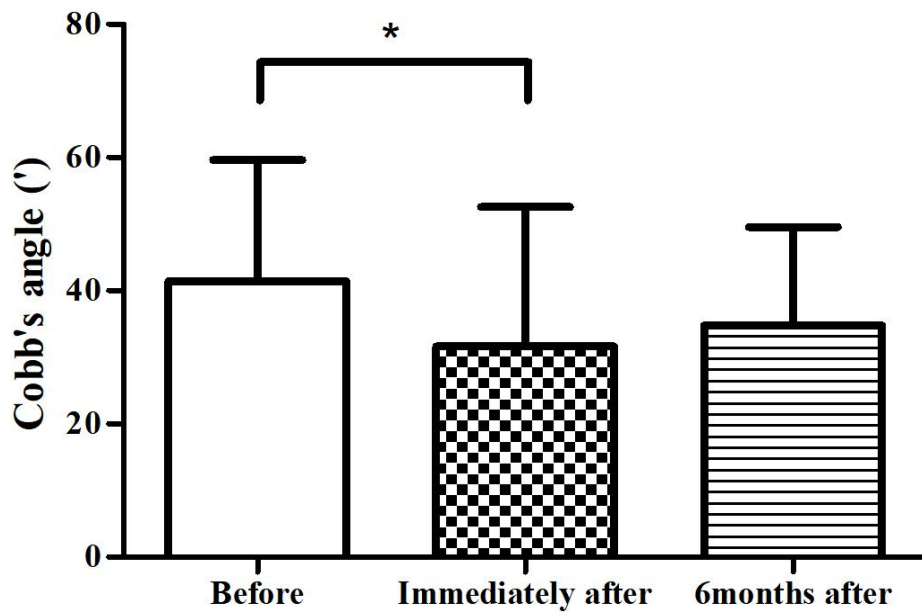


Fig 2. Comparison of Cobb's angle among before, immediately after and 6 months after wearing FLEXpine brace (* p<0.05)

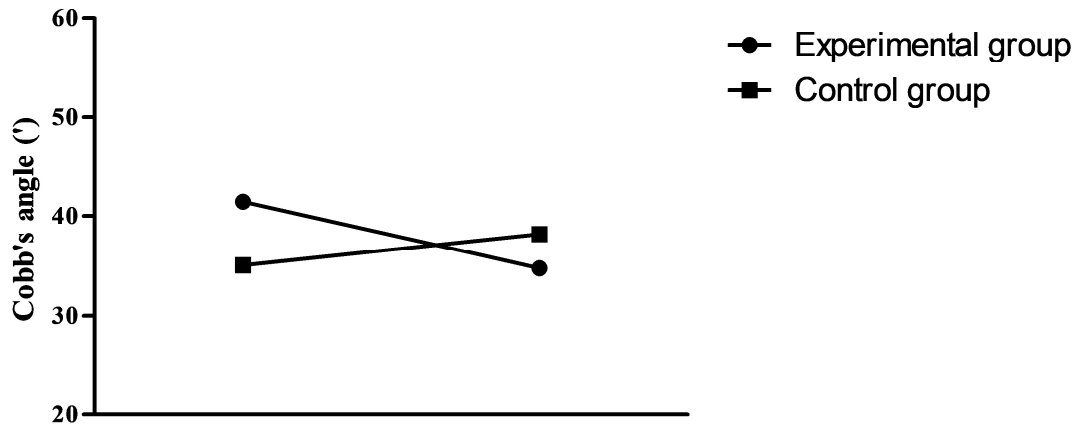


Fig 3. Comparison of progression of Cobb's angle between experimental group and control group