

ORAL PRESENTATION

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A preliminary report on applying the Schroth method principle after surgical fusion for scoliosis in a 23-year-old female with adolescent idiopathic scoliosis: a case report

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Background

The Schroth method has proven to be an effective treatment for patients suffering from adolescent idiopathic scoliosis (AIS); however, its impact on patients who have undergone surgical intervention to correct scoliosis and who suffer from postural imbalances along with diminished respiration is unknown.

Purpose

The aim of this study was to examine the effects of Schroth therapy on a 21-year-old female with AIS after spinal fusion.

Methods

During an evaluation in December 2011, one month after spinal fusion (T10-Pelvic), the patient's clinical sagittal profile demonstrated a significant forward trunk inclination of 5 cm. Angle of Trunk Rotation (ATR) was 5° in the thoracic and 4° in the lumbar. Quality-of-life score was 3.3 (SRS 22 questionnaire). Body image was 3 (Trunk Appearance Perception Scale (TAPS)). Pain score was 4 using the Visual Analog Scale (VAS). Force vital capacity (FVC) was 2.1 liters. Chest expansion was 1.9 cm in the subaxillary, 2.2 cm in the nipple line and -2.0 cm around the waist. Positive bilateral Thomas Test for hip flexors and knee extensors. Gluteus maximus and medius strength -4/5 bilateral, quadratus lumborum -3/5 bilaterally. Decreased abdominal and trunk extensor strength. Single-leg stance was 5 seconds right and 6 seconds left.

The physical therapy regimen included modified application of the Schroth exercises for patient with spinal fusion. The patient trained three 1-hour sessions per week for a duration of 10 weeks at an outpatient clinic, and was instructed to apply the learned principles during her daily activities and home exercise program, which consisted of 30-minute sessions five days per week. The patient is currently in treatment.

Results

After the 10 week treatment period, the patient had demonstrated preliminary measurable improvement. The clinical trunk inclination reduced to 2.5 cm, the ATR had decreased to 3° in the thoracic and 2° in the lumbar. Quality-of-life score and body image showed improvement with a score of 4.5 on the SRS 22 and 5 on the TAPS. Pain score diminished to 1. FVC increased to 2.8 liters and chest expansion to 2.8 cm, 3.1 cm and 1 cm at measured locations. Gluteus maximus and medius bilaterally +4/5 and hip flexors and knee extensors improved in flexibility. The patient felt more comfortable with her appearance and reported satisfaction with the results.

Conclusions and discussion

These preliminary findings may suggest that physical therapy utilizing the Schroth Method, with modification for fusion, may be a useful way to treat patients after spinal fusion.

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