International Journal of Science and Research (IJSR)
ISSN: 2319-7064
Impact Factor 2024: 7.101

Influence of Scroth's Method along with Core Strengthening & Tapping on Idiopathic Scoliosis Patient in Early 20's in Terms of Curve & Balancing Abilities: A Case Study

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Abstract: ***The Purpose of this study was to determine the influence of Scroth's method along with core strengthening & tapping for idiopathic scoliosis with a female patient in her early 20's in terms of her spinal curve & balancing abilities. There were no particular activities that the subject could not perform, but patient complained of difficulty in maintaining the standing position for a prolonged time. The Exercises Programme consists of Scroth's Method along with Tapping and core stabilization exercises, including home exercises focusing on Patient's balancing abilities, the lateral symmetry of the spinal sway, the distortion & the height of the pelvis and scapular bones. The Programme lasted for 4 weeks and included 5 sessions per week; with each session lasted for 30 min. Before & after the exercise Programme, the subject was monitored for the changes in spine alignment and measurement of winging in scapula. Also, using a balance measurement for subject's static & dynamic balancing activities was tested. Even Posture evaluation was conducted before the commencement of Exercise Programme. After executing the exercise Programme for 4 weeks, the spinal sways of the subject were corrected, and her static & dynamic balancing abilities were improved compared to the baseline values.***

Keywords: Scoliosis, Scroth's Method, Cobb Angle, Physiotherapy Rehabilitation, Curve Correction

1. Introduction

Scoliosis is a spinal deformity inclusive of lateral curvature and rotation of the vertebrae. The reasons of scoliosis range and are categorized extensively as congenital, neuromuscular, syndrome-related, idiopathic and spinal curvature because of secondary motives. The general public of scoliosis cases encountered via the general practitioner may be idiopathic. The herbal history relates to the etiology and age at presentation, and usually dictates the remedy. But it is the affected person's records, bodily exam and radiographs that are important within the initial assessment of scoliosis, and in determining which sufferers need extra issues. Scoliosis with a primary diagnosis (non-idiopathic) have to be diagnosed with the aid of the health practitioner to pick out the reasons, which may additionally require intervention. Patients with congenital scoliosis must be evaluated for cardiac and renal abnormalities.

This study suggests that Schroth technique and core stabilization have a nice impact in topics with scoliosis. The Society on Scoliosis Orthopaedic and Rehabilitation Treatment (SOSORT) recommends scoliosis-specific exercises as an essential intervention to prevent or slow curve progression. SOSORT defines Physiotherapeutic Scoliosis-Specific Exercises (PSSE) as individualized exercise programs that include patient education, three-dimensional auto-correction, training in adapted activities of daily living, and stabilization of corrected posture.

The Schroth method is one of the most widely used PSSE approaches. It focuses on three-dimensional correction of the individual curve pattern during daily activities through a combination of sensorimotor training, postural correction, and corrective breathing exercises. Correction of scoliotic posture is achieved using exteroceptive and proprioceptive feedback, mirrors, isometric contractions, and targeted exercises to elongate shortened muscles and strengthen weakened asymmetrical muscles while maintaining a specific breathing pattern. The most critical component of this method is auto-correction, which refers to the patient's ability to actively realign the spine in all three planes to reduce deformity. Additionally, physiotherapists encourage patients to consciously maintain the corrected posture learned during exercise sessions in their daily activities.

2. Material & Methods

Participant

The Patient was selected among the 20 years old female patients who visited Physiotherapy OPD Department at Yashoda Super speciality Hospital, Kaushambi. The Patient was referred to Physiotherapy Department by Dr Amit Sharma for Pain in the Thoracic region & unusual dropping of shoulder on Rt. Side. There was no specific ADL'S that she could not perform, but she complained of difficulty in maintaining standing Position for long.

The examination of the subject showed the lateral sways of her spine revealed that her cervical & thoracic spines were mildly swayed to the right side. Moreover, the Left sided scapular Inferior angle was lower than the Right sided inferior angle by 3cm. The Lumbar spines of the patient were significantly swayed in a convex way towards the right side.

The Right side of the pelvis was also higher than the left side. The subject did not complain of pain in her daily life, but she confessed that when she looked into the full-size mirror, she felt stressed because the heights of the left & right shoulder looked different.

Instruments

The instruments that were used in this study to measure the balancing abilities was the BBS (Berg Balance Scale) and Posture Analysis was done using Posture Analyzer (GAIT – ON). The patient was tested before the start of the Exercise Programme& 4 weeks after the completion of the exercise Programme.

Figure 1: Scoliosis Evaluation

Procedure

The study was conducted in 4 stages

1ST Stage – Evaluation & Planning

2nd Stage – Primary Tests

3rd Stage – Tapping & Physiotherapy Management

4th Stage – Follow up Tests.

The Procedure continued over 4 weeks. Each Session lasted for 30 min. The tests were conducted on the subject who gave her informed consent to participate in the study considering its purpose & duration.

Physiotherapy Management

1) Electrotherapy Management: For pain relief
   - Hotpack + TENS – For 15mins. Over Rt Scapula and B/L Knee
   - US for 5 mins over Rt Rhomboids.
2) Exercise Therapy:
   - Calf stretch
   - Hams stretch
   - ITB stretch
   - Scapular strengthening exercises: Rhomboids strengthening exercises
   - T/Y/W, Protractor and Retractor strengthening exercise
3) Back & Core Muscle strengthening:
   - Bridging with Gluteus squeeze
   - Cat and camel
   - Back press
   - Bridging with Swiss ball
   - Superman Pose
4) MET Knee (Quads and Adductors -Abductors)
5) Kinesio Taping: Kinesio tape used as assistant to growth upward rotation, posterior tilt and reduce internal rotation.

Figure 2: (a) Superman Exercises, (b) Cat And Camel, (c) Bridging with Gluteal Press, (d) Bridging with Swiss Ball

Figure 3: Tapping

Figure 4: Scroth's Method with Breathing, Spinal Extension and Stretching Exercises

3. Results

An examination was conducted before the start of exercise Programme and upon its completion. The examination of the lateral swaying of the spine in the baseline test showed shallow leaning towards the Left side. During the conduct of the Tapping Procedure, schroth's method & core stabilization exercises, the alignment of the spine was restored close to the normal state. Even. The direction of the spinous Process (towards the Rt side) discovered during the baseline tests was also turned to the front, indicating that the distortion of the lumbar spine was also restored to a better alignment. Even the BBS Changed from 38 to 42 in a period of 4 weeks.

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