Rehabilitation Principles & Progressions for Idiopathic Scoliosis

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Idiopathic Scoliosis

• Infantile idiopathic scoliosis
  • Diagnosed younger than 3 years
  • 80-90% spontaneously resolve

• Juvenile idiopathic scoliosis
  • Diagnosed 3-9 years
  • Found more frequently in girls
  • Higher risk for progression to more severe curves

• Adolescent idiopathic scoliosis
  • Manifests at or around puberty
  • Accounts for about 80% of all cases of idiopathic scoliosis
Presentation of Scoliosis

- Named based on direction of convexity
- Concave side - ribs close together
- Convex side – ribs widely separated
- Ribs on convex side are rotated posterior
- Ribs on concave side are rotate anteriorly
Adolescent Idiopathic Scoliosis

-Risk of Progression-

- Diagnosis at younger age
- Double curve patterns
- Female (approximately 10 > males)
- Curves develop before menarche
Screening

• Visual observation used during Adam’s forward bending test
• Structural deformity
  • Cannot be corrected with movement
  • Rotation toward the convexity
• Nonstructural deformity
  • Corrects with movement
  • Can result from length discrepancies, muscle disuse/overuse, habitual postures, and muscle guarding.
• Mild cases of scoliosis often respond to conservative care
Goals of Conservative Care

• Correct postural alignment and asymmetrical postural habits
• Prevent or inhibit further development
• Maintain proper respiration and chest mobility
• Improve overall spinal mobility
• Help resume or maintain functional abilities

• As a general rule:
  • Strengthen muscles on the convex side
  • Stretch muscles on the concave side
11 papers identified
Methodological quality of the studies was not strong
Studies generally demonstrated efficacy of exercise to reduce rate of progression or magnitude of the Cobb angle
Due to poor quality, the literature failed to provide solid evidence for or against the efficacy of exercises
Suggests the primary goal to prevent curve progression
This should be point of discussion with patients and their families

(Negrini 2003)
• 17 controlled trials with a total of 698 cases

• Outcome favorable for exercises with moderate effects on Cobb angle

• Concluded that therapeutic exercise regimes have a role in:
  - Decelerating progression of the curve
  - Reducing the magnitude of the curve
15 studies identified

Schroth exercise may be more beneficial for patients with a 10 to 30 degree Cobb's angle

Consider patients' initial curve status before prescribing the Schroth exercise program

Patients should perform exercises for at least one month for improved outcomes

Core muscle strength and structural deformity changed after Schroth exercises
Mechanical Correction Exercises - Thoracic

- Mobilize RIGHT Side bend
- Mobilize LEFT Rotate
- Strengthen RIGHT side bend
- Strengthen LEFT rotation
Mechanical Correction Exercises - Lumbar

- Mobilize RIGHT Side bend
- Mobilize LEFT Rotate
- Strengthen RIGHT side bend
- Strengthen LEFT rotation
Exercise Progressions

- General Warm Up
- Manual therapy
- Mechanical Correction Exercises
- Symmetry Exercises
- Functional Exercises
Post Surgical Care

• Reinforce the post surgical protocol and precautions described by the physician
• Answer questions and address concerns regarding the normal course of recovery
• Assist in addressing fear avoidance behaviors early
Post Surgical Recommendations
Bringing it together
References


References


