COMPARING FLEXIBILITY EVALUATION METHODS IN SEVERE IDIOPATHIC SCOLIOSIS (MAJOR COBB ANGLE ≥90°): SUPINE TRACTION RADIOGRAPH VERSUS PHYSICIAN-SUPERVISED SIDE BENDING FILM

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Background:

Assessing flexibility is vital for AIS patients with curves over 90°. Traction radiograph is commonly utilised in assessing AIS patients with severe curves while supine side-bending films are routinely done for flexibility evaluation. Comparison between Physician-supervised side bending film (PSSB and traction radiographs in severe scoliosis had not been investigated.

Objectives:

To analyse the flexibility of severe scoliosis with Cobb angle ≥90°, comparing supine traction (ST) radiograph versus PSSB bending film.

Materials and methods:

Seventy-two severe idiopathic scoliosis patients in a single academic institution between 2015 and May 2023 who underwent single-staged PSF with curves ≥90° with available anteroposterior, traction and side bending radiographs were recruited.

Results:

Fifty-seven patients had major curve in the MT region with mean Pre-Op Major Cobb of 107.3±16.7° and mean post-op Major Cobb of 50.8±15.4°. 15 patients had severe curves in the TL/L region with mean pre-op Major Cobb of 101.1±8.3° and mean post-op Major Cobb of 48.1±11.7°. Correction for major MT curve and major TL/L curve was 53.1±10.9% and 52.7±9.9%, respectively. Paired t-test reported no significant difference for MT curve when comparing SBCI (1.7±0.5) and TCI (1.6±0.6). However, TL/L curve comparison between SBCI (1.3±0.3) and TCI (1.4±0.3) demonstrated a significant difference. The SBCI for TL/L curve was closer to 1 indicating that the Cobb angle on SB radiographs for TL/L curves could predict the post-operative Cobb angle better.

Conclusion:

PSSB and ST radiographs were comparable as an evaluating method in severe AIS patients with MT major curves. PSSB had a better prediction for the post-operative correction for TL/L major curves.