

WHICH FACTORS AFFECT THE MAGNITUDE OF FRACTIONAL LUMBOSACRAL CURVE AFTER POSTERIOR COBB TO COBB FUSION FOR LENKE TYPE 5 CURVES IN AIS?

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PURPOSE

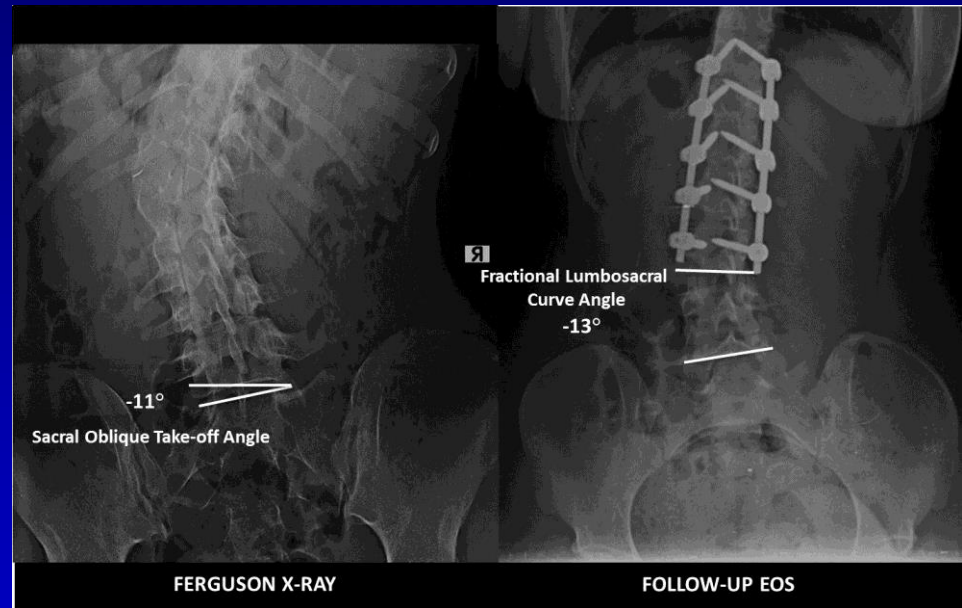
Aim of this study is to evaluate the clinical outcomes and radiologic parameters affecting the magnitude of fractional lumbosacral curve (LSC) and spontaneous correction of unfused thoracic curve (UTC) in Lenke Type 5 AIS patients, treated by posterior Cobb to Cobb fusion.

MATERIAL & METHODS

- **51 (47F, 4M) Lenke type 5 AIS patients treated with posterior Cobb to Cobb fusion using segmental pedicle screws and allograft were included.**
- **Preop, f/up coronal & sagittal parameters were analysed.**

MATERIAL & METHODS

- Preop Ferguson x-rays were used to measure sacral oblique angle (SOA).
- Clinical outcomes were evaluated with SRS22r.
- Spearman's correlation test was used for statistical analysis.



RESULTS

- Ave age was 15(12-17) years & f/up was 7(2-13) years.
- Ave thoracolumbar/lumbar (TL/L) Cobb angle improved from 42,8° to 6,3° with 85% correction rate.
- Spontaneous correction rate of the UTC was 57%.
- Ave instrumented level was 5,5 (4-7); lower instrumented vertebra (LIV) was L2 in 2 pts, L3 in 40 pts & L4 in 9 pts.

RESULTS

- Mean SOA was 8° (0-16).
- SOA was > 5° in 32 pts (63%).
- LIV tilt improved from 24,9° to 3,5° (86%).
- Postoperative fractional LSC was > 10° in 12 pts (24%) and disc wedging (DW) below LIV was > 5° in 21 pts (41%).

RESULTS

- There were significant correlations between fractional LSC magnitude, DW below LIV and SOA ($r=0,381$, $p=0,04$; $r=0,614$, $p<0,01$, respectively).
- Total SRS-22r score improved from 3,7 to 4,3.
- Pseudoarthrosis was found in 1 patient (1,9%) (loosening of 1 screw on convex side).
- There was no infection, neurological deficit or UTC progression.

CONCLUSION

Posterior Cobb to Cobb fusion provided significant correction of TL/L curve, spontaneous correction of thoracic curve and clinical improvement in Lenke Type 5 curves.

CONCLUSION

According to this study, if $SOA > 5^\circ$, the possibility of postoperative fractional lumbosacral curve and disc wedging below LIV is higher. For this reason sacral oblique angle should be evaluated preoperatively with Ferguson x-ray and should be taken in consideration in preoperative planning.

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