AN ANALYSIS ON THE IMPORTANCE OF UIV TILT ANGLE AND ITS CORRELATION WITH POSTOPERATIVE NECK AND MEDIAL SHOULDER IMBALANCE.

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Background
Studies found that current recommendations for UIV selection were not predictive of good postoperative shoulder balance.

Objective
To investigate the association between postoperative UIV tilt angle with postoperative medial shoulder and neck balance.

Methods
98 AIS patients with Lenke 1/2 curves who underwent PSF were recruited. UIV Tilt Angle, T1 Tilt, Cervical Axis and Clavicle Angle were measured preoperatively, postoperatively and at final follow-up.

Results
Mean follow-up was 37.9 ± 6.5 months. Significant factors affecting *postoperative T1 Tilt* were *postoperative UIV Tilt Angle, preoperative T1 Tilt and preoperative UIV Tilt Angle*. *Postoperative UIV Tilt Angle* and *preoperative Cervical Axis* were significant factors affecting *Cervical Axis* at final follow up. UIV level was not significant independent factor that affected post-operative T1 Tilt and Cervical Axis. There was strong correlation between postoperative UIV Tilt Angle and T1 Tilt for the whole cohort ($p< 0.001$), when UIV was at T2 ($p<0.001$), T3($p<0.001$) and T4 ($p<0.001$). Postoperative UIV Tilt Angle also had significant correlation with Cervical Axis when UIV was at T2 ($p=0.021$) and T3($p=0.009$).

Conclusions
Postoperative UIV Tilt Angle was an independent factor that had significant correlation with postoperative T1-Tilt and Cervical Axis measurement. There was strong correlation between postoperative UIV Tilt Angle and T1-Tilt for the whole cohort, when UIV was at T3 and T4. There was very strong correlation between postoperative UIV Tilt Angle and T1-Tilt when UIV was at T2. There was also moderate and significant correlation between postoperative UIV Tilt Angle and Cervical Axis for the whole cohort.