

# **BREAST ASYMMETRY IN ADOLESCENT IDIOPATHIC SCOLIOSIS (AIS) PATIENTS WITH STRUCTURAL THORACIC CURVE: A COMPUTED TOMOGRAPHY (CT) ANALYSIS AND ASSESSMENT OF PATIENTS' PERCEPTION USING BREAST-Q QUESTIONNAIRE**

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## **Background:**

Scoliosis results in breast asymmetry (BA) and thoracic cage deformation.

## **Objective:**

To investigate the incidence of breast asymmetry among AIS patients and the contributing parameters.

## **Methods:**

50 AIS patients scheduled for PSF were recruited. CT parameters measured for concave (CC) and convex (CV) side were breast volume (BV), extraversion angle (EA), coverage angle (CA), axial breast height (ABH), nipple-sternum distance (NSD), vertebral rotation angle (VRA), vertebral-sternal angle (VSA) and inclination angle (IA). BA (volume difference) was calculated using the formula:  $100 * \{(CC\ BV - CV\ BV) / [(CC\ BV + CV\ BV) / 2]\}$ . Thoracic cage deformation was reflected by IA. External breast morphology parameters included EA, CA, ABH and NSD. Preoperative and postoperative BREAST-Q questionnaires were completed by patients.

## **Results:**

33 (66.0%) patients had BA. (mean,  $6.0 \pm 9.9\%$ ) BA had significant correlation with CA and ABH ( $r=0.412$  and  $0.348$ ). IA had significant correlation with EA ( $r=0.630$ ), CA ( $r=0.326$ ) and NSD ( $0.390$ ). There was no significant correlation between BA and Cobb angle, VRA and VSA. Preoperative satisfaction domain correlated with CA ( $r=-0.284$ ) whereas psychosocial score correlated with apical vertebral level ( $r=-0.364$ ). Postoperative satisfaction domain improved from  $31.1 \pm 16.3\%$  to  $54.2 \pm 15.0\%$  while psychosocial wellbeing domain improved from  $32.8 \pm 18.7\%$  to  $56.4 \pm 15.9\%$  ( $p<0.001$ ).

## **Conclusion:**

BA occurred in 66.0% of AIS patients. BA had weak correlation with CA and ABH but no correlation with Cobb angle. IA had moderate correlation with EA but weak correlation with CA and NSD. Patients with BA had significant improvement in satisfaction and psychosocial wellbeing scores after surgery.