

# **MECHANICAL COMPLICATIONS DURING ENDOSCOPIC SCOLIOSIS SURGERY**

John R Crawford, Maree T Izatt, Clayton J Adam, Robert D Labrom, Geoffrey N Askin

*Paediatric Spine Research Group, Queensland University of Technology and Mater Health Services, Brisbane, Australia*

## **INTRODUCTION**

Endoscopic scoliosis surgery can be complicated by rod breakage. The aim of this study was to examine the effect of rod breakage on clinical outcome and to determine any predisposing factors.

## **METHODS**

We studied 83 consecutive patients that had undergone endoscopic correction for scoliosis. Patients were assessed pre-operatively and at regular intervals for up to three years post-operatively. Those patients sustaining rod breakages were compared with those that did not. Clinical outcome was assessed using the Scoliosis Research Society outcome instrument (SRS-24). Radiological assessment included coronal Cobb angles and the angle between adjacent screws.

## **RESULTS**

There were 13 (15.7%) patients sustaining 16 rod breaks at a mean time from operation of 21.5 months. No significant change in Cobb angle occurred after rod breakage (mean 18.3 vs 19.7 degrees),  $p > 0.05$ . Comparing patients with and without rod breaks we found no difference in SRS-24 scores for pain (4.30 vs 4.39), self image (3.50 vs 3.70), function (3.56 vs 3.35) or patient satisfaction (4.22 vs 4.58). There was no significant difference in screw angle for those patients that developed rod breakages (mean 3.2 vs 2.7 degrees). Significantly more breakages occurred with rib (11/40) and iliac crest (2/7) autograft compared with femoral allograft (0/36),  $p < 0.01$ .

## **DISCUSSION**

Rod breakage can occur following endoscopic scoliosis surgery. Our study shows that this is not associated with any significant loss of curve correction and has no effect on clinical outcome. Since changing to femoral allograft and by increasing the rod diameter no further rod breakages have occurred.