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CLINICAL ASPECTS OF ENDOSCOPIC ANTERIOR SCOLIOSIS SURGERY

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The Paediatric Spine Research group was formed in December 2002 to perform high quality research into the prevention and management of spinal disorders, with an emphasis on scoliosis. The research team has received grants of approx \$400K and is currently supervising 4 post graduate students, 2 undergraduate students and a yearly clinical fellow. The group has been active for just over 5 years and has successfully built collaborative bridges between the scientific and research expertise at QUT, and the clinical skills and experience of the spinal orthopaedic surgeons at the Mater Children's Hospital in Brisbane. This paper presents findings from a selection of published clinical research papers produced from a detailed database of patients who had endoscopic anterior scoliosis correction.

The Mater provides unique datasets of spinal deformity surgery patients, whose procedures are not being performed anywhere else in Australia. A major activity of the group has been to develop a number of clinical databases that enable the study of outcomes of innovative surgical interventions for spinal deformity. The most detailed is a database of endoscopic anterior scoliosis instrumentation. This initially sparse dataset of 30 endoscopic anterior scoliosis surgery patients was rapidly expanded and 5 years later contains 142 patients with electronic collections of X-Rays, photographs, preoperative CT scans and patient satisfaction questionnaires. With ethics approval, a subset of these patients has had postoperative CT scans, and a further subset have had MRI scans with and without a compressive load to simulate the erect standing position. This database has to date contributed to 11 international refereed journal papers, a further 9 journal papers either under review or in final preparation, 27 national conference presentations and 25 international conference presentations.

Major findings from some of these journal publications are; that endoscopic anterior thoracic scoliosis correction has no lasting negative effect on the pulmonary function of the patient, with preoperative values regained by one year postoperatively and surpassing preop values by 2 years in the range of 5-8%¹. Another study found that increasing experience performing endoscopic scoliosis correction, leads to statistically significant reductions in operative time, theatre/anaesthetic setup time, X-Ray irradiation dose and blood loss for the patient². These conclusions were based on analysis of the entire database as well as comparison of the first 20 cases, with the middle 20 cases and the 20 most recent cases. A paper analysing patient satisfaction questionnaires found that endoscopic anterior scoliosis correction significantly improved pain, self-image, and function with the greatest improvements reported to occur between 6 and 12 months after surgery³. Our most recent publication found that the preoperative fulcrum bending radiograph was indeed useful and predictive of the surgical scoliosis correction achieved by the endoscopic anterior surgical technique when prior knowledge had indicated that the fulcrum bending radiograph was only relevant for posterior scoliosis correction techniques⁴.

References

1. Izatt MT, Harvey JR, Adam CJ et al. Recovery of pulmonary function following endoscopic anterior scoliosis correction: evaluation at 3, 6, 12, and 24 months after surgery. *Spine* 31:2469-77, 2006.
2. Gatehouse SC, Izatt MT, Adam CJ et al. Perioperative aspects of endoscopic anterior scoliosis surgery: the learning curve for a consecutive series of 100 patients. *J Spinal Disord Tech* 20:317-23, 2007.
3. Crawford JR, Izatt MT, Adam CJ et al. A prospective assessment of SRS-24 scores after endoscopic anterior instrumentation for scoliosis. *Spine* 31:E817-22, 2006.
4. Hay D, Izatt MT, Adam CJ et al. The use of fulcrum bending radiographs in anterior thoracic scoliosis correction: a consecutive series of 90 patients. *Spine* 33:999-1005, 2008.