

# TREATMENT OF IDIOPATHIC SCOLIOSIS BY PREOPERATIVE LOCALISER CAST FOLLOWED BY HARRINGTON ROD FIXATION AND POSTERIOR SPINAL FUSION

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Idiopathic scoliosis is the commonest form of scoliosis. The exact aetiology still eludes us. While the disease is familial and probably genetic, the nature of genetic transmission remains largely unknown (Wynne-Davies, 1968). Conventionally it is divided into three types: infantile, juvenile and adolescent idiopathic scoliosis according to the age of onset.

As the cause is unknown, regular screening of children in the schools is the only effective way of detecting early scoliosis for management. It is generally agreed that curves of 20 degrees or less should be treated by close followup and observation.

Thoracic curves are generally progressive and deforming and cause pulmonary embarrassment. These should be treated early while the spine is still flexible. Curves under 40 degrees may be corrected and held by a well-constructed Milwaukee or underarm Boston brace. Bigger thoracic curves and other curves which are progressive should be treated by spinal instrumentation and fusion.

It is also noted that beyond 11 years of age, the incidence of idiopathic scoliosis with significant curves (i.e. above 20 degrees) shows a strong sexual bias for females: over 80 per cent. This is also the experience with the authors who report a 89 per cent female preponderance of patients undergoing surgery.

Apart from the essential and obligatory pre-anaesthesia investigations, pre-surgical treatment should also include the application of a corrective cast. It can either be a cumbersome and potentially dangerous Goldstein turnbuckle cast, a Cotrel EDF cast or preferably a Risser Localiser Body cast.

The authors allude to the technique of posterior spinal fusion as described by Goldstein and Moe. It would be better if they mention how they decide the extent for fusion. Most scoliosis surgeons agree with the guidelines set up by Louis A. Goldstein.

The authors report the use of the Harrington instrumentation with posterior spinal fusion. It is perhaps the most widely used instrumentation giving consistently good results. It is noted that they report the use of the distraction rod alone. The use of the post-operative localiser cast and then a Milwaukee brace protects the spine until bony union. Post-operative splinting by these devices and a meticulous surgical technique are responsible for the good results: good correction, few complications and a zero pseudarthrosis rate in their series.

While most idiopathic scoliotic patients are treated successfully from the posterior approach with Harrington instrumentation, this approach may be inadequate or impossible in some situations. Dwyer and Zielke anterior instrumentations are valuable adjuncts. They are valuable in the treatment of lumbar curves, thoracolumbar curves with severe lordosis and rigid thoracolumbar paralytic curves for which a staged combined anterior and posterior approach is necessary. These more major operations are fraught with complications including a higher pseudarthrosis rate.

Late to arrive on the scene are the sublaminar segmental spinal instrumentation of Luque (1973) and the more superficial segmental spinal instrumentation of Drummond (1984). They give good results in experienced hands.

The authors mention the simple form of spinal cord monitoring during instrumentation - the "wake up test" of Stagnara. While this is very useful in the local context, there are difficulties and problems associated with this test. Many types of electrical monitoring of spinal cord function have been developed. When performed properly, spinal cord monitoring which shows changes in evoked potentials provides an early warning of spinal cord dysfunction.

## REFERENCES

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