

# SCOLIOSIS TREATMENT WITH METHOD OF HARRINGTON

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*Scoliosis, defined in lateral deviation of the spin. The intra-thoracic and the intra-abdominal organs are displaced and compressed.*

*The actual mechanism in the production of scoliosis is unknown. The spine is a flexible column, supporting the head and the trunk and permitting motion in various directions.*

*Harrington distraction rods within the concavity of the curve if the patient can tolerate it, a Risser localizer cast should be applied after surgery and the patient encouraged to increase activities.*

**Key Words :** *Scoliosis treatment with Harrington*

## MATERIALS AND METHODS

Risser utilizes the Heuter-Voltmann epiphyseal pressure rule in treatment of scoliosis before the epiphyseal plates ossify, and changes are not demonstrable in roentgenograms.

In the lumbar region the vertebral bodies usually rotate and make the concavity of the curve cause of this is rotation of the curve in the dorsal region. Deviation of the spine to one side imposes greater force on the vertebra. The resultant wedging of the vertebral bodies encourages further displacement the body appears asymmetric is viewed from behind. The ribs on the concave side are closer together. The thoracic cage on this side is closer to the ilium.

Before development of cor pulmonale or cardiomyopathy major spinal surgery must be done. Because lung function is inadequate in cor pulmonale and cardiomyopathy. The patients require a six monthly control of x-ray of their spine and lung function test. Rapid deterioration in lung function suggests earlier stabilization of the spine.

Although Harrington recommends that Ls should not be instrumental because of its lordotic posture. At placing hook meningitis or cord symptoms should never follow this procedure.

It is concluded that the spine can be satisfactorily corrected with the Harrington distraction and compression systems providing the maximum correction.

Subperiosteal dissection from inferiorly to superiorly and the separation of the interspinous ligaments and the muscles from the midline are made easier using the Harrington instruments. Preparing the insertion sites for the distraction is required before starting the decortication. Then remove the spinous process from the vertebrae and decorticate the laminae and transverse process on the concave and convex side of the curve only. Next insert the distraction hooks, attach the distraction rod and correct the curve as much as possible. The distraction rod on the concave side of the curve will be at true place. After the decortication and the intra articular fusion are complete, insert the bone grafts obtained from the ilium, pack them between the transverse processes on the concave side of the curve in the thoracic area and between the lateral articulation in the lumbar area and pack bone beneath the rod but not lateral to it.

The distraction hooks should be seated in the pedicle at the right angle and slid in the pedicle. The lower hook is always placed beneath lamina of vertebra, the compression hooks are always seated on the convex side of the curve at the base of the transverse process in the thoracic area and the lamina of the vertebra in the lumbar area. The sequence of application should be compression first and followed by distraction. The application of the forces then, both distraction and compression should never be rapid.

Endotracheal anesthesia with controlled or assisted respiration is always used.

After treatment Harrington instrumentation was used, patients with thoracic and lumbar or thoracolumbar curves fusions were kept in bed for 1 months. The localizer cast was worn. When the patient began

to walk. This average total time of cast immobilization was a bout 8-9 months.

## RESULTS

In our clinic, in 1987, 1989 Harrington instruments is used 125 paties with curves ranging from 40° to 110° degrees, there were 5 different causes and ages of the patients ranged from 11 to 27 years. Average of them was about 16 years.

## DISCUSSIONS

In all patients an attempt should be made to identify the structural curve or curves because they are important in prognosis . The curve or curves should be corrected and a fusion should be performed. At secondary curves structural changes develop for long duration. According to Cobb any abnormal wedgin. Angulation, rotation or position of vertebrae in a lateral spinal curve is a sign of structural change.

In scoliosis secondary changes in the ribs and other supporting structures occur. The correction is obtained by applying pressure localized posterolaterally at a point level with the apex of the curve while traction is exerted on the head and pelvis. The cast may be bivalved and removed before surgery so that fusion may be performed more easily and safely. If so, the bivalved cast is taped in place when the patient has recovered from anesthetic.

Halo device that in widespread use, it provides good correction and it is comfortable for patient. Traction is begun with about 6 Kg. on the head and 3Kg. on each leg. Weights are gradually and equally added to a total of 12 Kg. on each end. Periods of traction under 10 days do not improve angular corrections. In pelvic obliquity most of the lower extremity weight can be placed on the high side limb. Halo-pelvic distraction was designed for use in patients with severe pulmonary restriction pressure sores from a cast, soft tissue contractures. Or inability to control pelvic tilt and rotation Halo-pelvic distraction is now rarely used.

The sacral bar is used only in paralytic scoliose and neved used in idiopathic curves.

With primary thoracolumbar curves, hooks should be placed one vertebra above the highest vertebra of curve end vertebra and at the lowest vertebra of the curve. With a primary lumbar curve hooks should be placed one vertebra above the highest vertebra of curve and vertebra and at the lower vertebra. Make longitudinal and transverse cuts across the facets in to the joints

and then impact the remaining fragments of bone into the joint, finally insert in the fusion area autogenous iliac bone grafts.

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