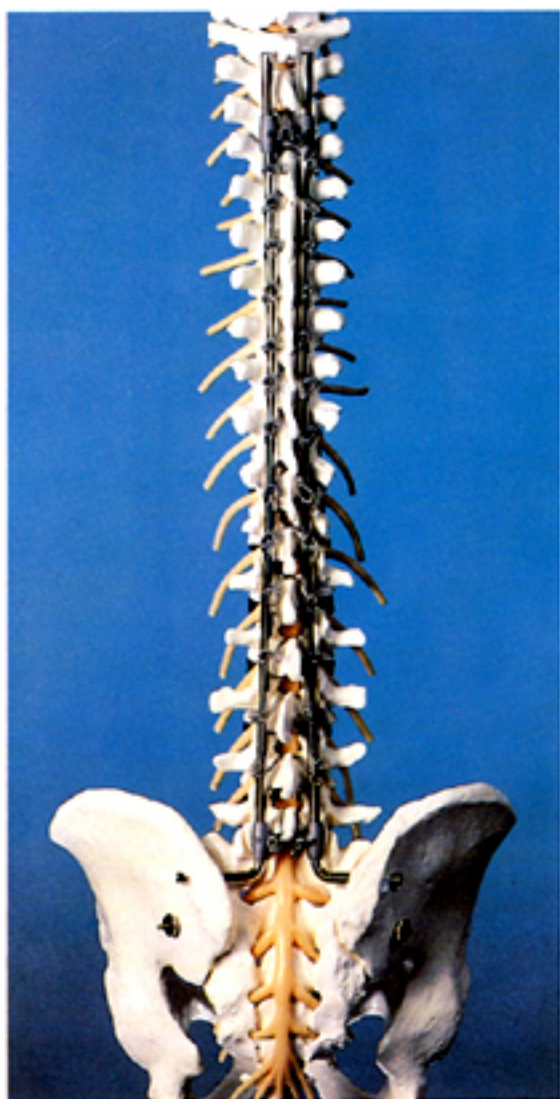


THE
MEHDIAN

Spinal

Fixation

System



Z
zimmer



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Both ends of the wire are then held by the T-handled hook, and the wire loop is squeezed against the dorsal surface of the lamina (4). The hook is then withdrawn, and a nylon cord is threaded through the wire loops (5). The cords are used to retract the wires laterally over the side of the wound and secured by ordinary artery forceps.

PREPARING THE PELVIC HOLES

The pelvic fixation jig is placed between the posterior iliac blades at the level of L5/S1 facet joints (6), and two holes are made in the posterior iliac blades to accommodate the short limbs of the L-shaped rods.

CONTOURING THE RODS

When two L-shaped rods have been connected together by H-Bars cranially and caudally, they are contoured to the desired sagittal curvatures of the spine (7 & 8).

Next, the cranial H-Bar is removed and the rods are passed through the sublaminar wires, the short limbs being inserted laterally into the holes that have been drilled in the posterior iliac blades (9). The cranial H-Bar is then replaced and the sublaminar wires are tightened (10 & 11).

If the patient has potential for growth, approximately three to four centimetres of the rods should be left above the top H-Bar so that this can slide up as the spine increases in length (12 & 13).



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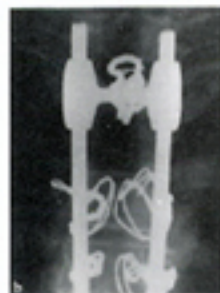
RESULTS

The efficacy of short, closed wire loops has been tested over 18 months in a miscellaneous group of 55 patients². The ease and safety of the Mehdiian system has been confirmed, and a review of the early cases shows that there have been no neurological complications, infections, wire breakages or other mechanical failures.

A second study compared the effectiveness of four different sublaminar systems, used on 17 sufferers from Duchenne Muscular Dystrophy between 1982 and 1987³. The short-term results show that the degree of loss of correction and pelvic obliquity was significantly less with the Mehdiian System compared with other systems.



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References

- 1 *Spinal Instrumentation Part II Segmental Spinal Instrumentation with L-Rods*. In instructional course lectures, the American Academy of Orthopaedic Surgeons St. Louis Mosby 1983, Allen, BL, JR.
- 2 *Segmental Spinal Instrumentation Using Short Closed Wire Loops*, Hossein

Mehdiian MD, Stephen Eisenstein PhD FRCS. Presented at a meeting of the ISSLS, Miami, Florida, USA, April 1988

- 3 *Spinal Stabilization for Scoliosis in Duchenne Muscular Dystrophy*, Hossein Mehdiian MD, Nobuyaki Shimizu MD, Victoria Draycott MScP, Gwyn Evans FRCS, Stephen

Eisenstein PhD FRCS. Presented at a meeting of the British Scoliosis Society, Bath, March 1988

- the operating field is not obstructed by wires that stand proud, so inadvertent contact with the wires that have been passed is prevented;
- the wires can be retracted adequately by means of nylon cords, which are passed through the loops and hung adjacent to the soft tissues;
- the wires are of the correct size, so there is no need to cut them after tightening; and
- operating time is reduced substantially.

H-BARS

The H-Bars used in the Mehdian System are made of standard stainless steel, in three transverse dimensions – 20mm, 25mm and 30mm – and in two calibres, to match $\frac{3}{16}$ " and $\frac{1}{4}$ " rods.

Like the short closed wire loops, the Mehdian System's H-Bars have a number of advantages:

- rods can be fixed rigidly to the pelvis;
- quadrantal fixation gives good rotational control; and
- spinal growth in children is accommodated without losing the correction.

INSTRUMENTS

A full range of instruments has been designed as part of the system. It comprises:

- a T-Handled Hook: this makes it easy to retrieve the looped end of a wire once it has been passed beneath the lamina;
- a Wire Tightener: this clamps the ends of the wire before they are tightened, so that they cannot escape accidentally;
- a Rod Holder: this holds the L-shaped rods together during contouring;
- a Pelvic Fixation Jig: this helps with the placement of holes in the pelvis preparatory to the insertion of the short limbs of L-shaped rods; and
- Nylon Cords: used to retract the short wire loops.



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APPLICATIONS

There are a number of different applications for the Mehdian System, which can be used either with L-shaped Luque, or Harrington rods. Examples include:

- the correction of neuromuscular scoliosis – with two L-shaped rods;
- the repair of spinal fractures and tumours – with two Harrington rods; and
- the correction of idiopathic scoliosis – with one Harrington rod and one Luque rod.

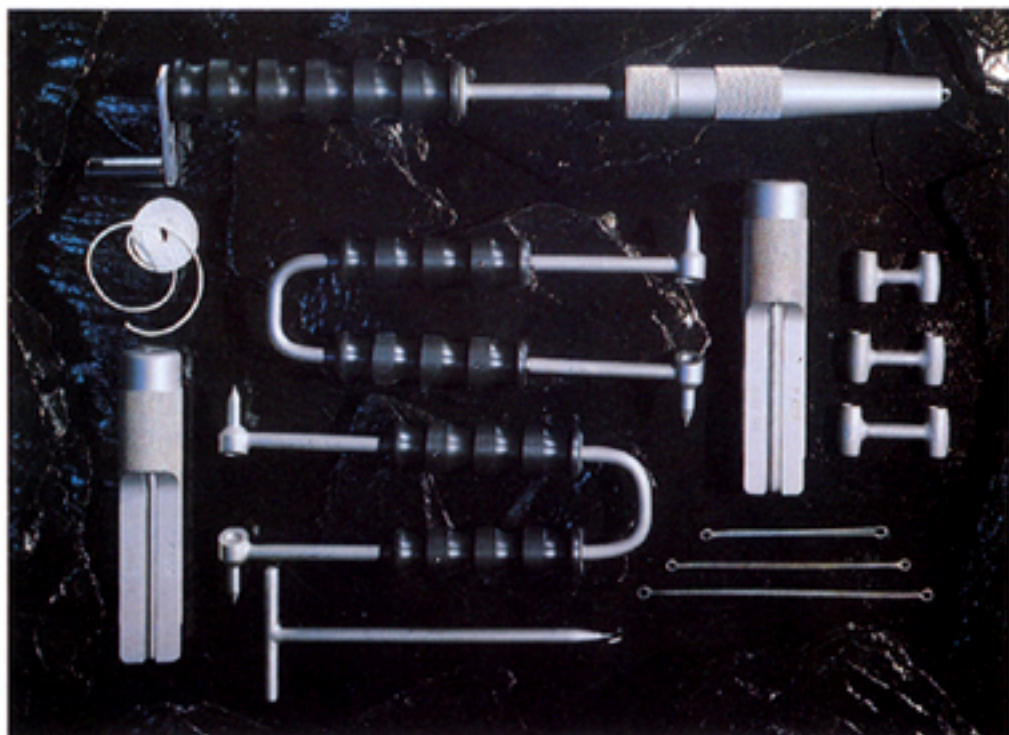
TECHNIQUE

The technique used with the Mehdian System can best be described by use of an example – in this case, internal fixation to correct neuromuscular scoliosis.

The spine is prepared for the passage of sublaminar wires in the same way as for any SSI operation. Each wire loop is contoured to the cranio-caudal width of its lamina ①, passed by hand beneath it ②, then grasped by the T-handled hook ③ and manipulated until there is an equal length of wire cranially and caudally.

THE MEHDIAN

Spinal Fixation System



MEHDIAN SPINAL SYSTEM

1430-000	Mehdian Spinal Wire 75mm (bx 10)
1430-001	Mehdian Spinal Wire 100mm (bx 10)
1430-002	Mehdian Spinal Wire 120mm (bx 10)
1430-003	Nylon Cord Tapes (bx 6)
1430-004	Nylon Cord Tapes (single)

TIE BAR SYSTEM

1430-005	Tie Bar 20mm CRS x 1/4" diameter
1430-006	Tie Bar 25mm CRS x 1/4" diameter
1430-007	Tie Bar 30mm CRS x 1/4" diameter
1430-008	Tie Bar 20mm CRS x 3/16" diameter
1430-009	Tie Bar 25mm CRS x 3/16" diameter
1430-010	Tie Bar 30mm CRS x 3/16" diameter

INSTRUMENTATION

1430-011	Mehdian Spinal Set
1430-012	Mehdian Wire Twister
1430-013	Mehdian Wire Hook
1430-014	Pelvic Fixation Jig 1/4" diameter
1430-015	Pelvic Fixation Jig 3/16" diameter
1430-016	Pelvic Rod Holder 1/4" diameter
1430-017	Pelvic Rod Holder 3/16" diameter
1430-018	Instrument Tray
8090-239	Fixation Jig Punch

For the repair of spinal
fractures and tumours



zimmer

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