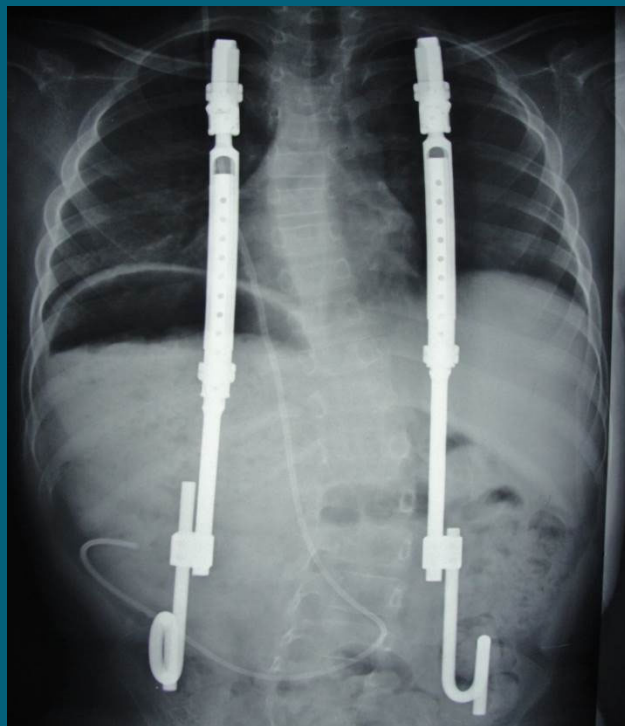


Use of the S-Hook as Pelvic Foundation as Part of Rib Based Distraction Construct



4th International Congress on
EARLY ONSET SCOLIOSIS
AND GROWING SPINE
Toronto - Canada Nov 2010

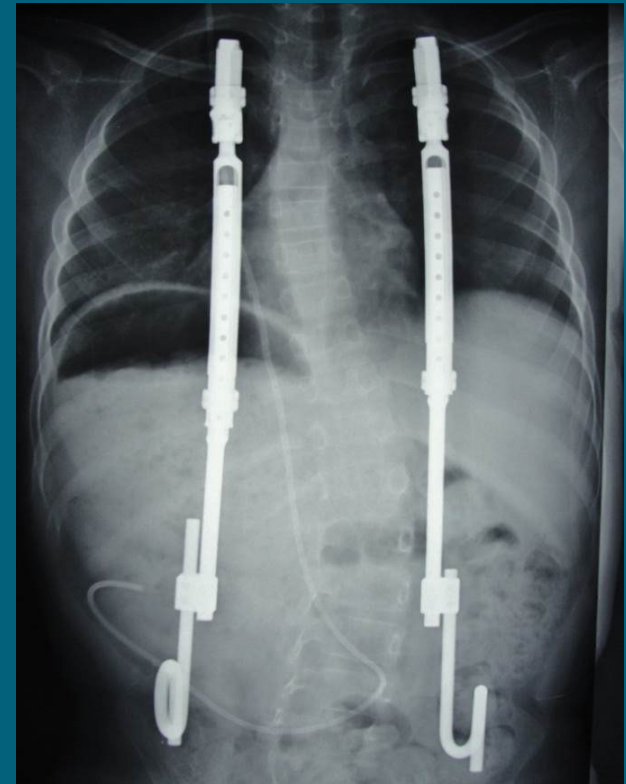
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INTRODUCTION

Rib Based Distraction Construct: VEPTR

1. Rib to Rib
2. Rib to Vertebrae
3. Rib to Pelvis



Rib to Pelvis

Indications:

Expansion Thoracoplasty: The Surgical Technique of Opening - Wedge Thoracotomy. Surgical Technique .

Robert Campbell et al
JBJS 2004

In patients with severe thoracolumbar curves and in those with myelomeningocele, when the posterior lumbar spinal elements are absent, the hybrid lumbar extension is coupled to a Dunn-McCarthy hook, which is placed on the iliac crest at the junction of its middle and posterior thirds

Since the initial report the indications have been extended and modified.

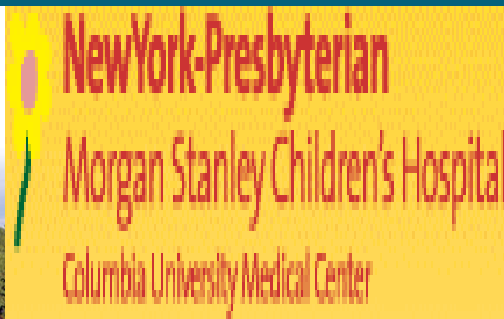
Purpose

The purpose is to review the effect of S-Hooks used for pelvic fixation in patients with VEPTR instrumentation

MATERIAL / METHODS

Multicenter Study, Retrospective & IRB Approved

1. Hospital de la Concepcion - Puerto Rico
2. University of Utah, Children Hosp.- Utah
3. Morgan Stanley Children's Hosp. -New York
4. Shriner Hospital for Children.-Oregon
5. IWK Health Centre- Nova Scotia- Canada



Shriners Hospitals
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MATERIAL/ METHOD

Patients treated with VEPTR – Rib to Pelvis with S-Hooks for pelvis fixation.

Minimun follow-up : 24 months

Preop and Postop

1. Clinical Variables
2. Radiological Measurements
3. Complications

RESULTS

50% of all VEPTR required Rib to Pelvis Fixation

44 patients

26 females / 18 males

Average age at evaluation : 71 months (+/- 5 years)

Average Follow-up: 45 months

Results

Common Indication:

Progressive Neuro Muscular Scoliosis

Preop Cobb : 64 degrees Postop Cobb: 53 degrees

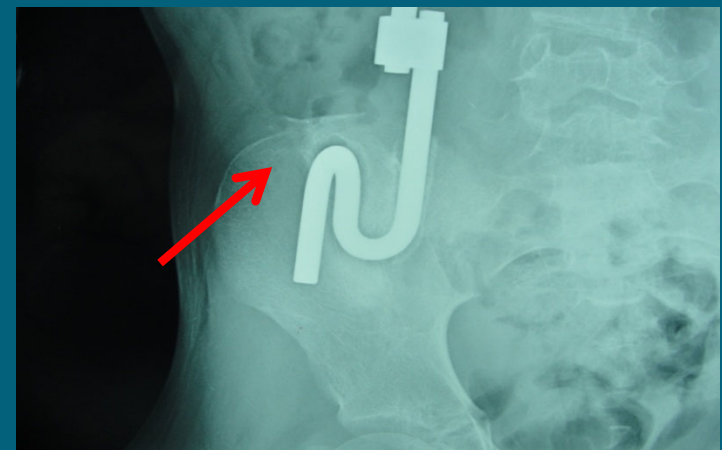
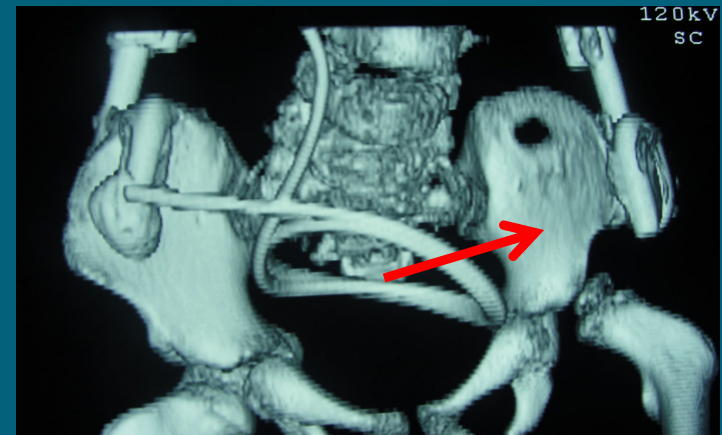
Preop Kyphosis: 49 degrees Post Kyphosis: 44 degrees

Common Construct : Dual Rods/ Side to Side Connector
T3/4 Resting over the iliac Crest
No suture to Iliac Crest

Complications

19 patients/ 44 patients: 43 percent

- | | |
|---------------------|------|
| 1. Sliding | 8/19 |
| 2. Distal Migration | 6/19 |
| 3. Pain | 3/19 |
| 4. Bursitis | 1/19 |
| 5. Infections | 1/19 |



Complications vs.:

Gender	Male / Female	p: 0.1676
Initial age	<3 years / > 3 years	p: 0.1426
Ambulation	Non / Amb	p: 0.9669
Weight	Under/ Healthy / Over	p: 0.3503
Preop Cobb	<45 / >45	p: 0.8607
Preop Kyphosis	< 55/ >55	p: 0.9884

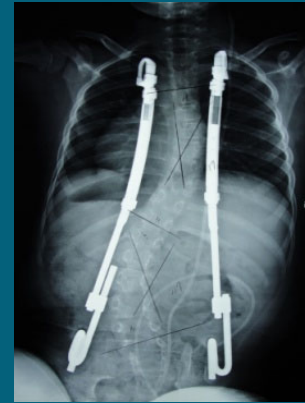
Complications vs.:

Construct:

Single



Dual



p: 0.7178

Orientation:

Campbell



Emans



p: 0.3001

Sliding vs. or Migration vs

Gender p: 0.59

Weight p: 0.71

Age p: 0.22

Ambulation p: 0.72

Preop Cobb p: 0.22

Preop Kyphosis p: 1.00

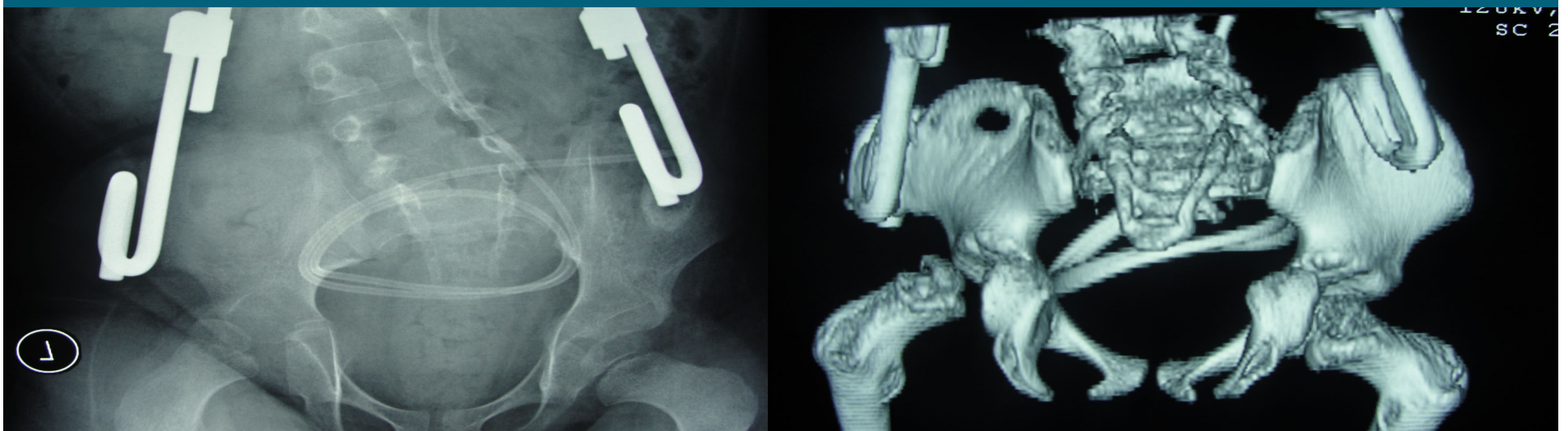
Construct p: 0.51

Hook Orientation p: 0.59

Conclusion:

This technique has a high incidence of complications. The most common are sliding of the hook out of the iliac crest and distal migration.

We were unable to establish a specific reason for the high complication rate.



Conclusion

These findings highlight the need of a different fixation technique with a more stable attachment to iliac crest.

GRACIAS

