

Myth or truth?

VEPTRs are too bulky!

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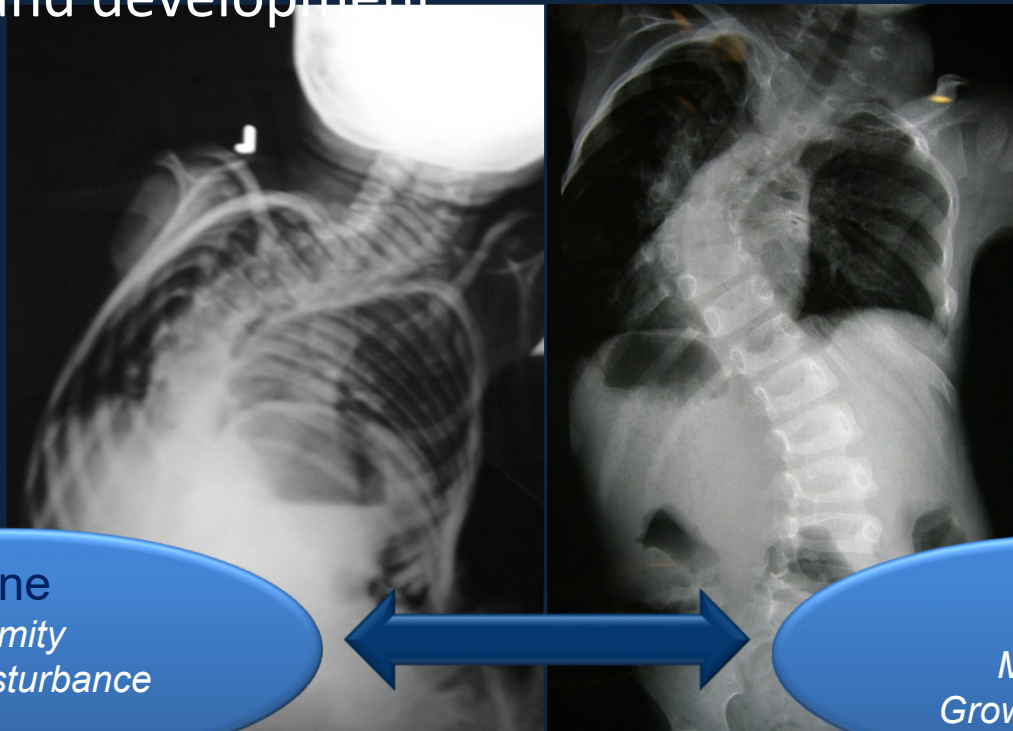
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Disclosure

- Consultancy agreement
 - DePuy JnJ
 - K2M
- *Special thanks to*
 - *Carol C. Hasler, Basel, Switzerland*
 - *Elhanan Bar-on, Tel-Aviv, Israel*

Objectives

- Close connection between the spine and the chest wall
 - Shape and function
 - Growth and development



Spine
Deformity
Growth disturbance

Thorax
Deformity
Malfunction
Growth retardation

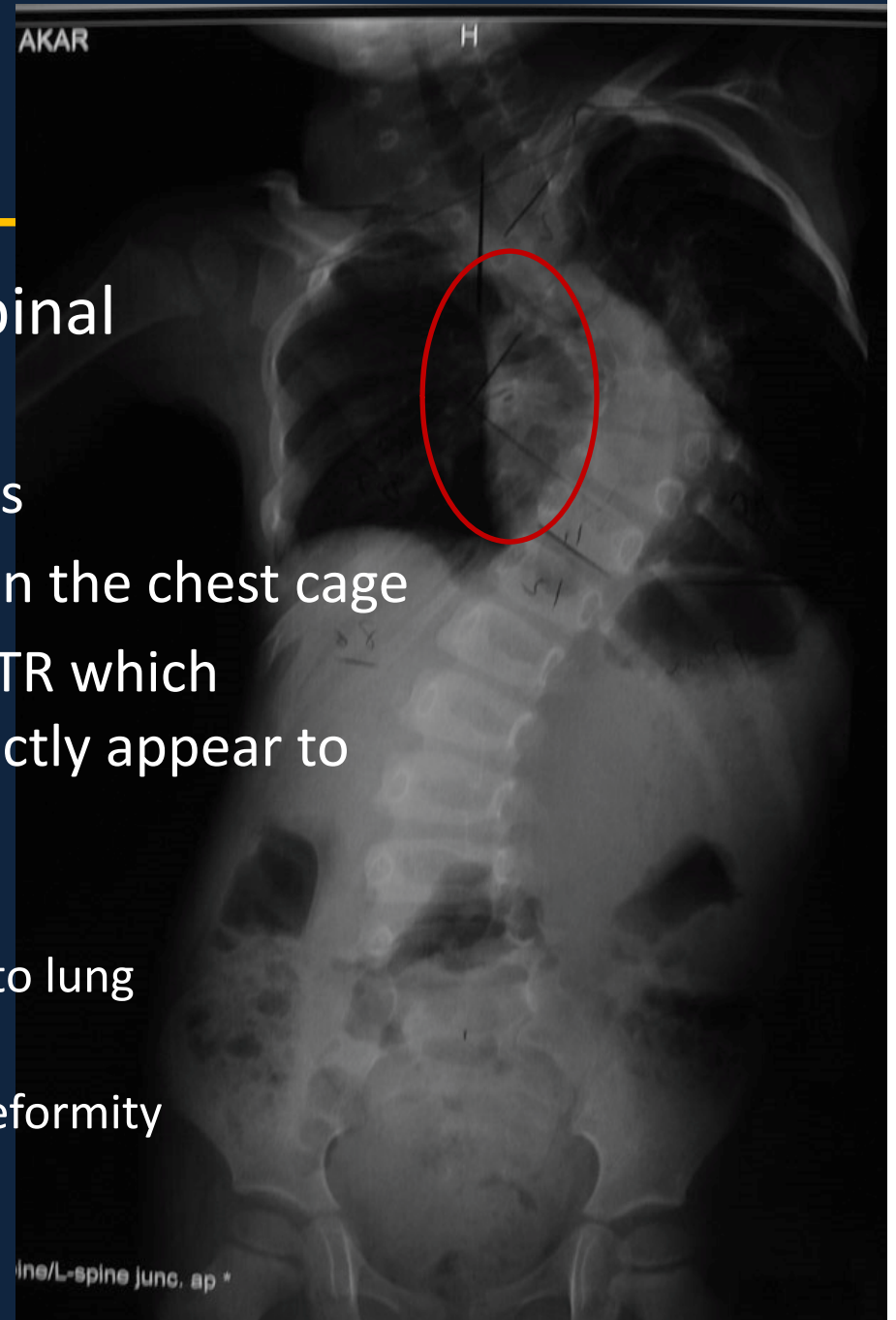
Objectives

- Spinal surgeons
 - Looked at the problem through a narrow viewpoint and limited it to the middle of the picture
- Bob Campbell
 - New surgical technique and new implant
 - Widened the point of view
 - Whole picture
- The thorax and the chest cage have come into interest in spinal surgery
 - New vision! New horizon!



Objectives

- Thoracic asymmetry and spinal deformity
 - Absence or adherence of ribs
 - Negating deforming forces on the chest cage
 - Thoracic expansion and VEPTR which address these problems directly appear to be ideal solutions
 - Symmetrical hemithoraces
 - Removal of external obstacle to lung development
 - Improvements in the spinal deformity



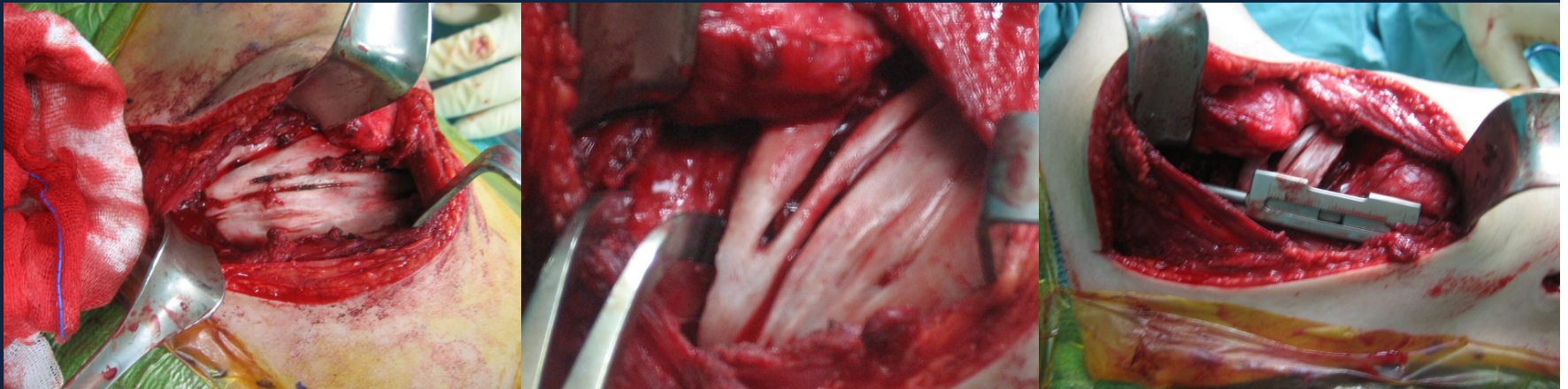
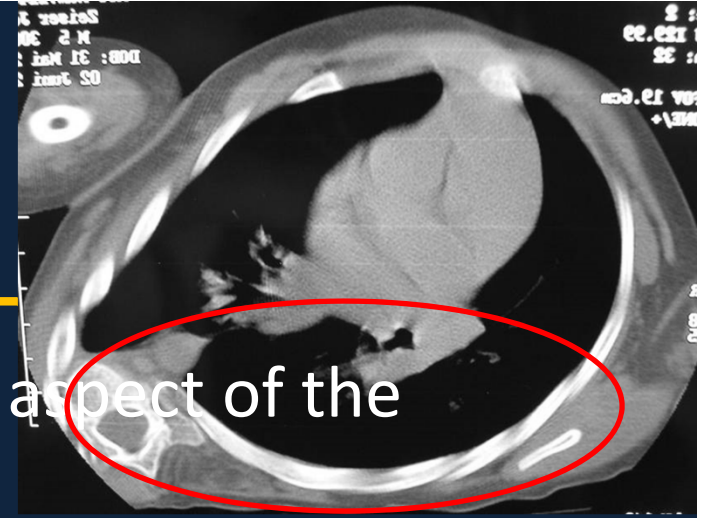
Problems

- Muscular coverage
- Implant profile
- Repetitive surgeries

Problems

Coverage

- Muscle coverage of posterolateral aspect of the thorax
 - Problematic area
 - Fairly thin cover of muscle
 - Even thinner in young children
 - In young children with rib aplasia and rib fusion
 - Muscles are no thicker than a membrane
 - Increased intercostal distance



Problems

Implant profile

- VEPTR
 - Rods sliding upon each other and one that is expected to withstand significant loading in all three planes
 - It is required to be produced at a certain width and length
 - Its profile is bulkier than pediatric spine implants



Problems

Repetitive stress

- Fusionless surgery

- Multiple surgeries for lengthening

- Children with

- Exposed

- Low-profile muscle coverage

- Wound problems

- With the current insufficient



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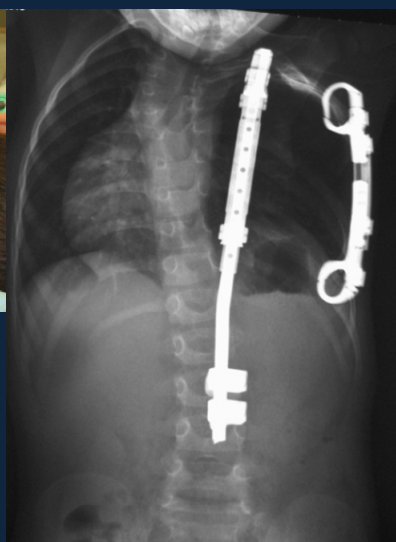
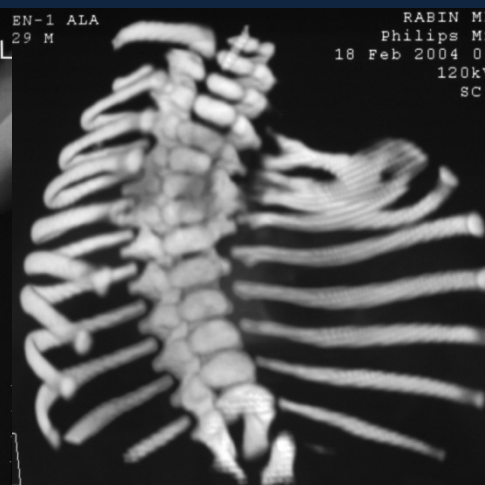
- **VEPTR increases the risk of wound problems significantly!**

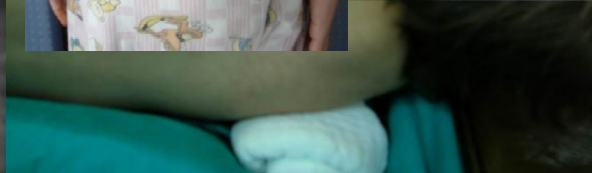
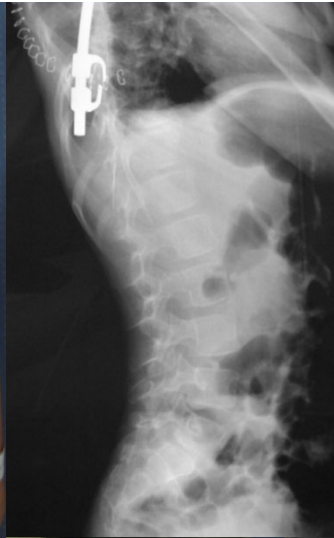
Problems

- VEPTR
 - Originally is a chest cage implant
 - VEPTR could be an alternative for every growing spine problem?
 - Possible complications of fusionless spinal implants have also compelled many surgeons to use the VEPTR for primary spinal deformities
 - VEPTR is one of the fusionless spinal implantation techniques?
 - Misconception

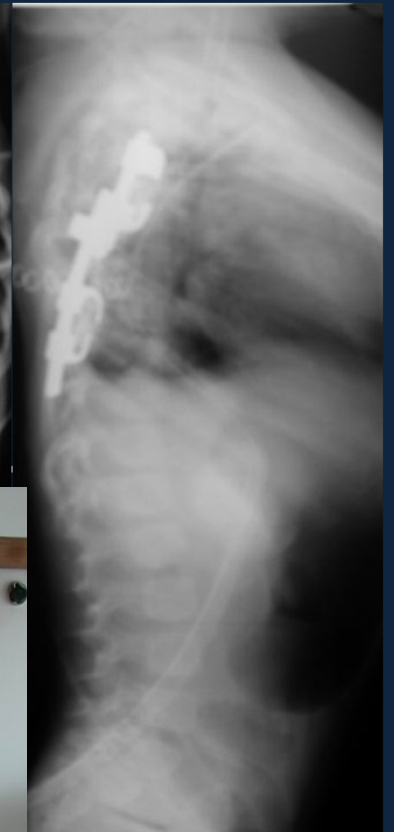
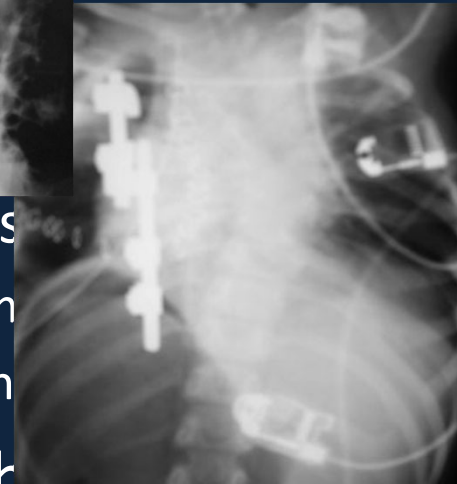
Conclusion

- In the case of a thoracic adhesion
 - Surgical dissolution of said adhesion
 - Expanding the thorax with the help of an implant
 - Ideal!
 - VEPTR
 - Easy application
 - Easy expansion during lengthening procedures
 - Good biomechanical
 - Good results obtained from multi-center follow-up data approaching 15 years
 - BEST IMPLANT FOR THIS PURPOSE





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Conclusion

- It is possible to deduce the long-term results of spinal growth retardation with fusionless spinal implants. The question of the long-term results of disturbed chest cage mobility with rib implantation remains to be answered.



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