VENTRAL ROD MIGRATION OF POSTERIORLY APPLIED GROWING ROD TECHNOLOGY FOR EARLY ONSET SCOLIOSIS

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ICEOS 2016 10th International Congress on Early Onset Scoliosis November 17 & 18, 2016 Utrecht Holland

Ospidéal Mhuire na Leanaí, Cromghlinn

Our Lady's Children's Hospital, Crumlin

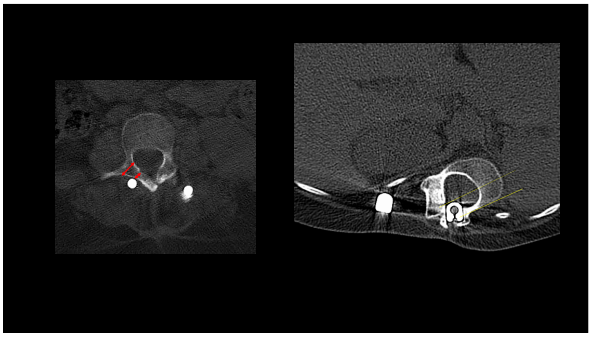
STUDY DESIGN

Longitudinal prospective database of growing rod patients

2007- Ventral Rod Migration (VRM) identified in a patient

Consensus definition of VRM (Paediatric Unit x3 Spinal Consultants)

Ventral rod movement of ≥ 2mm through posterior lamina cortex evidenced on axial CT imaging



RESULTS

- Between 2007 & 2015 n=90
- 30 Post Operative CT spine
- Ventral rod migration n= 3 (12%)

CASE DISCUSSION

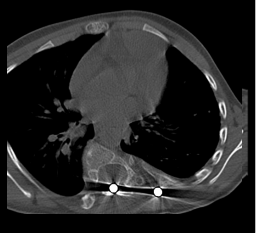
- GM DOB 11.01.2002
- EOS (Infantile idiopathic)
- 09.09.05 Synergy Growth Rods inserted
- 13.01.06 Rods replaced with Legacy System
- 17.04.07 Suffered an acute neurological injury during a lengthening procedure

  -Paraplegic 0/5 (MRC) -Sensory Level T10

CASE DISCUSSION

24.09.07

- "*In the upper thoracic region the right sided rod appears to lie within the posterior spinal canal.*"

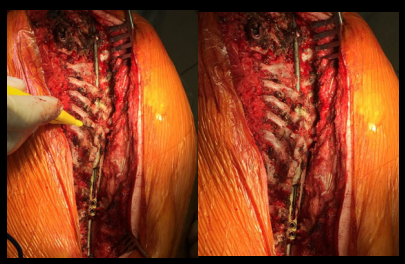


CASE DISCUSSION

- 01.11.07 Growing Rods removed
- Scoliosis continues to progress. 2 further procedures
- Ultimately, 21.05.15 Posterior Spinal Fusion T1- Pelvis

CASE DISCUSSION

- EC DOB 08.10.2001
- EOS(Infantile Idiopathic) Concomitant astrocytoma(PXA) of spinal cord
- 2002- Serial Casting
- 2007- Index insertion of growing rods
- 2012- Axial CT demonstrative of VRM



OBSERVATIONS

VRM occurred in EOS pts who are:

- Osteoporotic (evidenced by DEXA)
- Mean Cobb angle ≥ 70°
- Mean Apical kyphosis ≥ 40°

LIMITATIONS

- Non stratified cohort
- Temporal variance of imaging performed
- Bone densitrometry not universal
- Range of spine based systems utilised

DISCUSSION

- Is the apropriate CT modality to screen at risk patients for GR complications?
- Is MR a better alterative neuroaxis imaging?
- Who are the at risk patients?

CONCLUSION

VRM is potentially catastrophic yet quiescent

Previously not described in EOS literature

Index of suspicion in patients with an initial severe degree of deformity & poor vertebral bone stock