Early experience with MAGEC
growing rod lengthening;
expected (programmed)
vs. observed

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DISCLOSURES

Mark S. Schwartz, DO – None
Peter F. Sturm, MD – Consultant for Medtronic
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Viral Jain, MD – Consultant for Medtronic
The MAGEC (MAGnetic Expansion Control) System is used in the treatment of early onset scoliosis (EOS) as an alternative to traditional growing rods to reduce the need for multiple surgeries.
BACKGROUND

• Lengthening is performed using an External Remote Controller (ERC) allowing non-invasive distraction of the rod in an outpatient setting.

• An expected distraction length is programmed into the ERC as a stopping point for distraction at each lengthening.
BACKGROUND

• The amount of achieved lengthening is determined by ultrasound.

• We present our experience with our first 18 patients and the observed post lengthening distraction measurement versus the expected or programmed distraction measurement.
PURPOSE

• This study aims to compare the observed post lengthening sonographic distraction measurement to the expected distraction measurement programmed into the ERC.
METHODS

• All 18 patients with MAGEC growing rods returned to the outpatient clinic for transcutaneous lengthening with the ERC at two to five month intervals.

• The same provider performed the lengthenings at each visit. The machine was programmed to lengthen 3mm to 5mm.

• The amount of achieved lengthening was determined via ultrasound by the same technicians each visit.
RESULTS

• 18 patients with MAGEC growing rods have been studied to compare the expected versus observed lengthening.

• A total of 75 lengthenings were performed with 38 lengthenings performed on left sided rods and 37 lengthenings on right-sided rods.
RESULTS

- 13 of the 75 observed lengthenings achieved the full-expected length, with 5 of those measuring greater than the expected length.
- Full-expected lengthenings were observed in 6 left sided lengthenings and 7 right-sided lengthenings.
- 43 of the 75 (57.3%) observed lengthenings showed a measurement within 1mm of the expected lengthening.
CONCLUSION

- Our early experience in 18 patients with MAGEC growing rods shows a small percentage (17.3%) of observed lengthenings achieve the expected (programmed) distraction length.

- A much larger percentage (57.3%) achieved within 1mm of the expected (programmed) distraction length.
DISCUSSION

- Further study of MAGEC growing rods is necessary to determine if there is an ideal time between lengthenings, and an ideal expected (programmed) length to optimize results in these young patients.
REFERENCES


