

Poster presentation

Tethered cord - a new animal model

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Background

Children with myelomeningocele (MMC) are at risk of losing skills if they develop tethered cord syndrome. It's an ongoing discussion to do prophylactic tethered cord release or wait until the child develops symptoms. To learn more about tethered cord, we have developed a novel tethered cord model in pigs.

Materials and methods

Four 20 kg pigs (approximately 8 weeks old) underwent hemi-laminectomy on the 2nd segment of the sacral bone. Microsurgical dura opening was done in 1 sham pig and medulla was tethered in the remaining three. All four pigs underwent MRI using a clinically available 1.5 T magnet prior to surgery 2 weeks postoperatively.

Results

At follow-up all pigs were asymptomatic. MRI demonstrated no structural or pathological changes in the sham pig. In all three operated pigs, the spinal cord was tethered at the 2nd segment of the sacral bone. Furthermore, MRI revealed subclinical constipation in two of our pigs.

Conclusion

The result of this study supports our view that a porcine animal model with tethered cord may be useful in investigation of tethered cord in MMC.