IS-007
Notable postnatal alterations in the myenteric plexus of normal human bowel

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Purpose: The aim of this study was to determine neurone density, morphology, and nitric oxide synthase distribution of the normal myenteric plexus at different ages during infancy and childhood.

Methods: Specimens were obtained from small bowel and colon in 20 children aged one day to 15 years, at postmortem examination. Whole mount preparations were made of the myenteric plexus, which were stained using NADPH diaphorase histochemistry. The morphology of the myenteric plexus was described and the neurone density estimated.

Results: The myenteric plexus meshwork becomes less dense during the first years of life. The density of ganglion cells in the myenteric plexus decreases significantly with age during the first three to four years of life. The NADPH diaphorase positive population represents about 34% of all neurones in the myenteric plexus.

Conclusions: The notable decrease in neurone density in the myenteric plexus during the first years of life indicates that development is still an ongoing process in the postnatal enteric nervous system. Applied to the clinical situation, this implies that interpretation of enteric nervous system pathology, for instance intestinal neuronal dysplasia, is dependent on age of the patient.

IS-008
The Use of Real-Time Magnetic Resonance Guidance to Assist Anorectoplasty

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Purpose: On reconstructing infrapelvic structure in patients with imperforate anus, it is essential to place the anorectum correctly. There has been no practical method to compare the ideal pull-through route with the real one at surgery although the reconstructed 3-D image of the region is demonstrable. Since the real-time MR guidance is now available in the operative field to navigate the surgery, we applied it on treatment of the imperforate anus to know the exact position on the image when one pulls through the anorectum.

Method: Sacroperineal anorectoplasty was performed in a case with high-type anomaly, using 3-D navigation system. During procedures, the computer calculated the position, direction, and rotation of the tip of the pointer in space and the space information was registered to the pre-operative images loaded into the workstation and the position was monitored.

Result: We could demonstrate the exact position of the entry to the muscle complex and the center of the external sphincter for the anal orifice on the monitor, which could indicate the exact stereoscopic position where the pull-through route is created by looking at reconstructed image.

Conclusion: Real-time MR guidance would lead us a practical anorectal placement reflected from the ideal route.