

EXPERIMENTAL AND CLINICAL DATA TO THE SURGERY OF THE ILEOCAECAECAL JUNCTION IN CHILDHOOD

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SUMMARY

This study focuses on the importance of the ileocaecal junction. The first section explores the detailed anatomy of the enteric nervous system in the ileocaecal valve. Two distinct coaxial enteric nervous plexuses of ileal and caecal origin and myenteric Cajal cell network in the ileocaecal valve have been reported. No myoelectric isolation has been found between the ileal and caecal enteric nervous system, as it was described at the pyloro-duodenal junction. This anatomy explains the coordinated ileocaecal motility patterns.

The nitrergic hyperinnervation of the ileocaecal valve revealed by Whole-Mount preparation technique and NADPH-d histochemistry in the second section of the study explains why the intussusception (one of the most common surgical emergencies in children) happens at the ileocaecal junction. The decreasing nitrergic hyperinnervation of the ileocaecal valve with age revealed in this study may explain the decreasing occurrence of intussusception with age.

The importance of the differentiation between agenesia and atresia of the ileocaecal valve is discussed in the third section of this study. A case with agenesia of the ileocaecal valve is reported and surgical options are discussed. Resection and simple anastomosis are accepted in case of atresia and agenesia, but valve-plasty or replacement should be considered in imminent short bowel syndrome.

The fourth section is comparing the hydrostatical parameters of the ileocaecal valve with intussusception type intestinal valves, used for ileocaecal valve replacement. It has been established that the short intussusception type valves have appropriate antireflux efficacy to prevent the recurrence of Crohn disease, but only longer intussusception type valves are suitable for preventing of short bowel syndrome.

In the fifth section the ileocaecal valve with less hydrostatic antireflux efficacy has been found more effective microbiological barrier than the intussusception like valves. The use of the ileocaecal valve as a bilioenteric conduit may reduce the incidence of postoperative cholangitis after hepatico-potoenterostomy in biliary atresia.