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FEATURES OF THE STRUCTURE OF THE DIGESTIVE SYSTEM IN CHILDHOOD

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At birth, the organs of the digestive system differ in many anatomical and physiological features.

The oral cavity of newborns and children in the first months of life has a number of features that provide the act of sucking: its volume is relatively small, the palate is flattened, and the tongue is wide and thick.

Salivary glands at birth are mostly morphologically formed, but the secretion of saliva in children in the first three months is insignificant, which is most likely due to the immaturity of the central mechanisms of regulation of their function. In children 4-6 months, there is physiological salivation, which is a consequence of not yet acquired automatic swallowing of saliva and irritation of the trigeminal nerve by teething.

Esophagus. The entrance to the esophagus in newborns is located at the level of the disc between III and IV cervical vertebrae, gradually decreases with age and up to 12 years is at the level of VI vertebrae, as in adults. This is important physiologically - the baby can breathe and suck at the same time, avoiding aspiration. The higher position of the esophagus should be taken into account when inserting the probe and performing esophagogastroduodenoscopy. The transition of the esophagus to the stomach in all periods of childhood is located at the level of X-XI thoracic vertebrae.

Anatomical narrowing of the esophagus in newborns and young children is much weaker, but it does not affect the movement of milk. Cardiac sphincter in children in the first months of life is underdeveloped, so after eating there are vomiting - the return of a small amount of milk from the stomach out.

Stomach. The shape and location of the stomach change with the age of the child. At birth, the cardiac department, the bottom and body of the stomach are underdeveloped - so it is cylindrical in shape, and in infancy - pear-shaped. In the first months of life, the stomach is located higher than in adults and horizontally, its small curvature is turned back, due to the displacement of its loops of the intestine. Only at the end of the 1st year of life it occupies a vertical position, and finally located as in adults - after 7 years. The pyloric part of the stomach is well developed, but the nervous regulation is not mature, which can lead to pylorospasm in infants. In the postnatal period, the growth rate of the stomach remains high, its weight increases 24 times [1].

The intestine in children is relatively longer. At the newborn its length is 8 times longer than body length, whereas at the adult - only 4-5 times. The mesentery is longer, thin, easily stretched, so the intestines are more mobile. Physiologically, this is important because it promotes better mixing and digestion of their contents. On the other hand, these features can cause intestinal torsion, intussusception, the formation of additional loops of the intestine. The omentum in children under 5 years is short, which almost eliminates the localization of peritonitis in a limited area of the abdominal cavity.

The duodenum is located above - at level I of the lumbar vertebra, in adults - W-IV. It is relatively long and mobile. Only up to 7 years of age, adipose tissue develops around it, which fixes the intestine and reduces its motility.

The loops of the hollow and iliac (ileal) intestines are more compact, because a significant part of the abdominal cavity is occupied by the liver, and the small pelvis is not developed. In young children, there is a relative weakness of the ileocecal valve, in connection with which the contents of the cecum, rich in bacterial flora, can return to the ileum [2].

The colon at birth is also underdeveloped. Teniae coli - barely noticeable, gaustra absent. There is an uneven growth of different departments. Caecum - has a conical shape, quite mobile and located high. The higher the cecum, the more underdeveloped the ascending intestine. The vermiform appendix in newborns is cone-shaped, rather long, mobile, has no valve, the latter is formed during the first year.

The ascending part of the colon is very short and grows intensively after the 2nd year of life, when the cecum occupies its final position. The transverse colon has a horseshoe shape, its mesentery is relatively long, so it moves easily when filling the stomach and small intestine. It acquires a horizontal position after 2 years [3].

The pancreas is located in newborns at the level of the X thoracic vertebra, and in adults - I lumbar vertebra. The most developed part of it is the head. The surface of the gland is smooth, only in 10-12 years it becomes hilly, due to the development of connective tissue and the allocation of the boundaries of its lobes.

The liver in infants is relatively large and is 4-6% of body weight (in adults - 2-3%). It occupies almost half the volume of the abdominal cavity and protrudes from the edge of the costal arch by 2-3 cm in the first 3 years of life, and by 1-0.5 cm to 5 years [4]. The gallbladder in children is located in the thickness of the liver and is inaccessible to palpation.

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