Surgical complications of helminthiasis

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Relevance. Ascaridosis is an oral anthroponous geo-helminthosis caused by a roundworm (Ascaris lumbricoides) from the family Ascaridae, Nematoda. The clinical manifestations of ascaridosis are very polymorphic. In the early stages of the disease, the main pathogenetic action of ascaris is due both to the direct trauma of different tissues on the path of their migration and to the indirect sensitization of the organism of the infected person by the products of parasite metabolism. Adult parasites can perforate the intestinal wall and exit into the abdominal cavity, or during hyperinvasion, ascarids may twist into the glomeruli, causing mechanical obstruction of the intestine. Ascarids can cause the following pathological changes: general reactions due to sensitization of the body (eosinophilia, lymphohistiocytic infiltration); endarteritis; hemorrhage into the intestinal wall; micronecrosis in the wall of the intestine, liver, lungs; local reactions (circulatory disorders due to the effects of toxic-allergic products; development of necrosis zones and perforation of the wall with the appearance of helminths in the development of peritonitis; penetration of ascarid into the liver, leading to cholangitis, pericholangitis and pericholangitis [1, 2, 4]. Treatment of surgical complications of parasitic diseases (acute intestinal obstruction of the intestine; ascariasis appendicitis, perforation of the intestinal wall, obstruction of the biliary tract) has its own characteristics and should always include intraoperative use of anthelmintic chemotherapy for the prevention of parasites.

Aim of the study. To analyze, on the basis of open sources of information, features of clinical course, diagnosis and treatment of surgical complications of ascaridosis.

Materials and methods. Scientific information is based on long-standing sources such as the Tokyo Recommendations (2013), the World Society of Emergency Surgery, and scientific publications in the Evidence-Based Databases (PubMed). A total of 57 sources (2010-2019) were found and analyzed with the following surgical complications of ascaridosis:

1. The finding of ascarid in the abdomen (perforation of the intestinal wall by a parasite) - 13 cases.
2. Ascariasis bowel obstruction - 11 cases.
3. Ascariasis appendicitis - 7 cases.
4. Obstruction of the biliary tract and gall bladder by ascarids - 3 cases.

According to [4], lesions prevailed in the small intestine, appendix and gall bladder. The appearance of ascarid in the small intestine in the mucous membrane causes the development of acute purulent-necrotic enteritis. Edema and inflammatory infiltration cover not only the mucous membrane but also the submucosal layer. There is also significant swelling of the intermediate tissue.

According to [3], signs of mainly acute phlegmonous appendicitis were noted, including signs of circulatory and lymphatic circulation, swelling of the mucous membrane and diffuse leukocyte infiltration of all layers of the appendix wall that were polymorphonuclear and neutrophilic. In contrast to acute appendicitis caused by other factors, acute ascariasis appendicitis is in some cases characterized by eosinophilic infiltration of the appendix wall. In the mucosa there is hyperplasia of lymphoid follicles. The entry of helminths into the biliary tract and gall bladder causes the development of acute catarrhal or acute purulent cholecystitis. During histological examination swelling of the mucous membrane of the gallbladder and diffuse infiltration by its neutrophils and polymorphonuclear leukocytes are noted. Proteinase excretion leads to vasodilation with leukocyte congestion and perivascular infiltration. Surgical tactics for acute ascariasis appendicitis presuppose prior drug treatment for 2–8 hours followed by appendectomy. In acute cholecystitis (caused by the introduction of helminths in the bile ducts and gallbladder), complex anthelmintic and antibacterial therapy was more often performed, which allowed to stop the inflammatory process. Surgery in such patients was performed after a comprehensive examination (2-3 days, without discharge from hospital). In the postoperative period, all patients, regardless of the type of surgery, underwent general chemotherapy with albendazole at a dose of 15 mg / kg for 5 days. The bowel moto-evacuation function in patients was restored for 2-3 days, which facilitated the removal of dead parasites naturally and as soon as possible recovery, reducing the further stay in hospital on average for 3-4 days.

Conclusions. Thus, surgical treatment, followed by a course of chemotherapy with the use of an effective antiparasitic drug in the treatment of bowel ascariasis, can prevent the development of postoperative complications and relapses.

References: