Case Report

Ascaris Worm Incidentally Found During the Appendectomy: A Case Report of Parasitic Appendicitis

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Abstract:

Acute abdominal pain leads to many differential diagnoses, all of which make it difficult to put them together during a clinical examination. One of rare causes of abdominal pain is Ascaris worm infection that can have various manifestations. This study reports a patient with acute abdominal pain with intestinal ascariasis. A 30-year-old male patient with Right Lower Quadrant pain (RLQ) of the abdomen, nausea, and vomiting referred to the Emergency Department (ED). An incidental discovery of Ascaris worm with 25 cm length occurred after Appendectomy. Although the clinical signs of ascariasis are nonspecific, a complete history and careful examination, and especially attention to epidemiological considerations, are very effective in diagnosing the disease. It is also recommended that surgeons consider such etiologies in the mind, to search further in the intestinal tract to find the cause.

Keywords: Ascaris worm, appendectomy, Parasitic.

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Introduction:

Diagnosing the cause of acute abdominal pain before surgery seems a challenging clinical scene, and most patients are being referred to the operating room (OR) with other diagnoses (appendicitis or acute cholecystitis) than what would be discovered in OR (1). Acute abdominal pain is one of the most common causes of emergency department visits worldwide and is one of the leading causes of death and disability in today's society. The causes of acute abdomen vary from region to region. A preoperative diagnosis of the exact cause of an acute abdomen is not necessary, but the surgeon's primary responsibility for dealing with an acute abdomen is to determine the need for a laparotomy (2). Localized peritonitis such as acute appendicitis, have very common and noteworthy differential diagnoses (3). Emergency laparoscopy can be used for acute abdominal pain. Acute appendicitis is sudden inflammation of the Appendix and the most

common etiology of acute abdominal disease (4), usually happening due to the obstruction of the appendix. Various factors such as enlargement of lymph follicles, tumors, and parasites may contribute to the obstruction of this hollow tube (4). The parasites can cause blockage of the appendix duct, directly or by stimulating the immune system, consequent inflammation and hyperplasia of the lymphatic follicles of the appendix wall (5). Parasites are known to cause parasitic diseases in humans. According to the World Health Organization (WHO), parasitic diseases caused by contaminated food are one of the biggest health problems in the contemporary world (6). Some parasitic worms have been reported in human appendicitis cases as well as Enterobios vermicullariasis, Ascaris lambriquoides, Trichoris trichiora, Shistozoa species, and Tenia species (5). Ascariasis is a globally distributed parasitic infection, especially in tropical areas where unhygienic human excreta disposal is common. Infection may happen by ingestion of eggs. Ascariasis can cause bowel obstruction, perforation, appendicitis, and pancreatitis (7).

Some diseases and pathologies of the abdominal abdomen do not have clear clinical and paraclinical symptoms and findings, and on the other hand, the necessity of surgery cannot be proved, which confuses the surgeon decision making. So being familiar with rare cases like Parasitic Appendicitis would be helpful in management of the patients with acute abdominal pain and also the technique and progression of the operations.

Case Presentation:

A 30-year-old male patient with Right Lower Quadrant pain (RLQ) of abdomen, nausea, and vomiting referred to the Emergency Department (ED). The patient's symptoms started three days ago since the morning of referral day. Then an anorexia was added to the patient's symptoms. Upon examination of the patient, we noticed tenderness and rebound tenderness in the RLQ area, and the Psoas sign was positive. Ultrasound of the abdomen confirmed the diagnosis of acute appendicitis. The patient did not mention any previous medical history or using medication. Due to the presence of acute abdominal pain and history and clinical examination, the patient was taken to the operating room with a possible diagnosis of acute appendicitis. During the surgery, there was a mild inflammation of the appendix, which led the surgeon to perform an appendectomy. After that the search for the cause of the acute abdomen began. During the lumen exploration, an Ascaris worm, approximately having 25 cm length (Figure 1) was found incidentally in the intestinal lumen (about 40 cm from Ileosecal) and was removed by enterotomy. On the first day after surgery, the patient's abdominal pain was significantly reduced, and on the second day, with the return of appetite, he began to eat. The patient was discharged from the hospital on the third day after surgery and was completely healthy and well in the follow-up visit.

Discussion:

Appendicitis is the most common acute surgical event in the abdomen and appendectomy is one of the most common surgical procedures in the world (4).

Gastrointestinal infection occurs worldwide as a result of parasitic infestation. It was a controversial issue in terms of its role in acute appendicitis etiology. Ascariasis is one of the

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most common helminthic diseases in humans occurring commonly in developing countries. Ascaris normally infects the small bowel with occasional migration of the adult worm into the biliary and pancreatic ducts, portal venous systems or the abdominal cavity, thereby causing ectopic forms of the disease (8).

Ascariasis can cause serious intra-abdominal complications such as intestinal obstruction, cholangiohepatitis, biliary obstruction, liver abscess, pancreatitis, acute appendicitis, intestinal perforation and granulomatous peritonitis. Acute appendicitis by an adult worm is a well-known complication. The ascaris may result in obstruction of the lumen. This blockage leads to increased pressures within the appendix, decreased blood flow, bacterial growth inside the appendix with subsequent inflammation and luminal distention resulting in acute appendicitis (7).

Ascaris lumbricoides – associated appendicitis is likely to be a consequence of high intestinal worm load; several cases of appendiceal obstruction and inflammation have been reported (9,10).

Nevertheless, the appearance of moving Ascaris in the appendix is not rare. Appendicitis due to Ascaris lumbrocoide migration to the appendix is also uncertain, as the symptoms of this migration can mimic appendicitis, but rarely cause appendicitis (11). Wani et al. conducted a study aimed at examining ascariadial appendicitis. In their study, they found 11 appendicitis patients were reported having ascariasis. Coincidentally, 8 patients (72.7%) had worms inside their appendix but no appendicitis, while the remaining three patients (27.2%) had appendicitis with ascaris (12). Zarbaliyev et al. studied all patients with acute appendicitis who underwent appendectomy surgery from January 2016 to January 2017. Finally, in their study of 4 cases of appendicitis along with a parasitic infection was observed in 4 cases which none of those was ascariasis. This shows how rare is the ascariasis co-occurrence with appendicitis, as seen in our reported case (13)**.**

Conclusion:

In this case report we notice the importance of the complete abdominal search for other causes of acute abdomen pain. This paper demonstrated the need for the surgeons' attention to a relatively rare diagnosis that may be hidden in small surgical incisions of appendectomy, as well as Parasitic Appendicitis. Secondary complications of ascariasis such as appendicitis, acute bowel obstruction, and necrosis of the pancreas are rare, but are among the most dangerous complications of this parasitic infection; so this differential diagnosis should be in the mind of the surgeons.

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Tables and Charts:

Figure 1: The Ascaris worm found in the intestinal lumen of patient (25 cm length).

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