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CASE REPORT

Suppurative Cholangitis Caused by *Ascaris lumbricoides*: Report of A Fatal Case

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Summary

Infection with the adult form of *Ascaris lumbricoides* develops in the small intestine. Despite its rareness, one of the most severe complications of the disease is pancreatobiliary system obstruction. Herein we report a patient presenting with suppurative cholangitis that caused by *A. lumbricoides*. Choledochotomy + T-tube drainage procedures were performed and found that the common bile duct was obstructed with an adult form of *A. lumbricoides*. Despite of the antibiotic treatment, the patient has died due to bacterial sepsis. Choledochal ascariasis is an unusual and a relatively rare clinical entity. It should be considered in the differential diagnosis of unexplained suppurative cholangitis with sudden onset, obstructive jaundice and so on.

Keywords: *Ascaris lumbricoides, Suppurative cholangitis, Obstructive jaundice*

Ascaris lumbricoides'in Neden Olduğu Süpüratif Kolanjit: Fatal Seyirli Olgu Sunumu

Özet

Ascaris lumbricoides'in erişkin formları ince bağırsakta enfeksiyon yapar. Nadir olmasına rağmen bu hastalığın en ciddi komplikasyonlarından biri pankreatobiliyer sistem tıkanıklığıdır. Bu makalede *A. lumbricoides*'in neden olduğu süpüratif kolanjit nedeniyle başvuran bir hasta sunulmuştur. Olguda koledoktaki tıkanıklığa *A. lumbricoides*'in neden olduğu görülmüş ve hastaya koledokotomi + T tüp drenajı uygulanmıştır. Ancak olgu antibiyotik tedavisine rağmen bakteriyel sepsis nedeniyle kaybedilmiştir. Koledokal askariasis alışılmadık ve oldukça nadir görülen bir klinik tablodur. Etiyolojisi izah edilemeyen, ani başlangıçlı süpüratif kolanjit ve tıkanma sarılığı gibi durumlarda ayırıcı tanıda askariasis düşünülmelidir.

Anahtar sözcükler: *Ascaris lumbricoides, Süpüratif kolanjit, Tıkanma sarılığı*

INTRODUCTION

Ascariasis is a human disease that caused by the parasitic roundworm *Ascaris lumbricoides*, known as the largest of the common nematode parasite of humans. Although it shows quite cosmopolitan distribution in globe, it is thought that it affects health of over one billion people adversely [1]. It is especially widespread in locations where overpopulation, low-sanitation-availability and random-defecation of human beings is observed [2]. Infection occurs through ingestion of food contaminated with feces containing ascaris eggs. The larvae hatch, burrow through the intestine, reach the lungs, and finally migrate up the respiratory tract. From there they are then reswallowed and mature in the intestine, growing up to 30 cm in length and adult worm inhabit the lumen of the small intestine. Dominant clinical form of ascariasis is intestinal form which is caused by adult forms. Invasion of adult worms, which located generally at jejunum and ileum, from ampulla vateri into the bile ducts is not a rare complication [1,3]

There is few publication about the choledochal ascariasis in the literature. Here we report a case of suppurative cholangitis that caused by an ascaris due to its rarity.

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CASE HISTORY

An 80-year-old male farmer applied to our clinic with severe abdominal pain, nausea, vomiting, fever and jaundice ongoing for 4 days. Transabdominal ultrasonograpy (USG) examination through the right upper quadrant revealed that both intrahepatic and proximal extrahepatic bile ducts were dilated. In the lumen of the visualised part of the common bile duct there were some indeterminate amorphous echogenicities with no acoustic shadowing, which could have been consistent with debris and/or parasite *(Fig. 1)*. In laboratory analysis, his leukocyte, liver enzymes (AST and ALT), total and direct billirubin values were 17.9 x 10^3/mm^3 (4.0-10.0), 815.7 and 609.3 U/L (0-40), 7.6 mg/dl (0.3-1.2), 6.5 mg/dl (0-0.2) respectively. Although the blood culture was obtained from the patient, an empirical intravenous ciprofloxacin treatment (2x200 mg) was begun. The blood culture revealed *Escherichia coli* growth however the patient was expired due to severe sepsis at the early postoperative period. Intraoperative bile sample culture and Gram staining colud not performed.

Since the suppurative cholangitis was dignosed an urgent endoscopic retrograte cholangiopancreatography (ERCP) was performed, but guide fiber/cord could not be pushed to reach proximal bile duct due to obstruction. The patient was taken into the operation emergently. Purulent-infected material and a worm about 30-cm long were observed during the choledochotomy procedure. The worm was removed, bile duct was cleaned and the procedure was completed by placing a T-tube into the choledoch. Despite of the antibiotic and supportive treatment, the patient has died on the first postoperative day of admission due to bacterial sepsis. The worm was confirmed a 28 cm-long *A. lumbricoides (Fig. 2)*.

DISCUSSION

As it is known, the female form of ascaris has a tendency to locate in narrow channels like the choledoch and bile duct [3,4]. If parasites stay in biliary system, they can cause an inflammatory reaction resulted necrosis, calsification, lithiasis, fibrosis and cholangitis in bile ducts. That is the

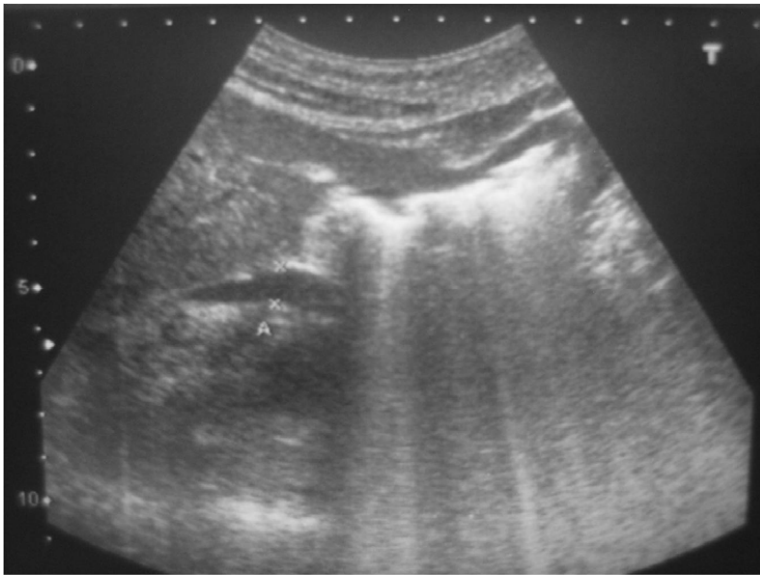

Fig 1. Gray scale transabdominal US view, right upper quadrant

Şekil 1. Sağ üst kadrana yönelik gri skala transabdominal US görüntüsü

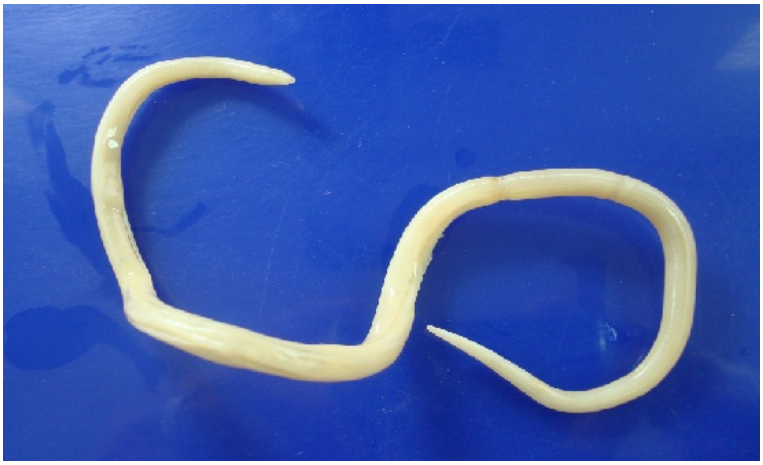

Fig 2. Adult *Ascaris lumbricoides*

Şekil 2. Erişkin *Ascaris lumbricoides*

reason why in cases with hepatobiliary ascariasis most common complaints of abdominal pain and vomiting are [5]. Cases in which obstruction of bile ducts and a bacterial infection exist together is cholangitis and is recognised as a classic Charcoat's triad that forms from right upper abdominal quadrant pain, fever and jaundice [6].

As it is noninvasive, reliable, easily available and cost-effective, USG is the method of choice as initial imaging modality in patients with obstructive jaundice and suspected hepatobiliary ascariasis. Tubular or serpiginous structures with echogenic walls in the dilated biliary ducts are sonographic findings suggestive of biliary ascariasis [7,8]. Computerized tomography, m*agnetic resonance* imaging (MRI) and *ERCP* are other diagnostic methods that can be used [9,10]. In the present case, both intra- and extrahepatic bile ducts were dilated, confirming obstructive jaundice that might be caused by debris and/or parasite in the light of the clinical and laboratory data. Choledocholithiasis which is the most commonly encountered cause of obstructive jaundice was not the first - although not exactly excluded - ultrasonographic comment, as the intraluminal echogenicities were devoid of that spesific sonographic artifact of acoustic shadowing seen posterior to calculi. There are many reasons for obstruction conditions that can cause biliary dilatation. Emergent ERCP was performed since laboratory and physical inspection results supported diagnosis of suppurative cholangitis. However surgical treatment of acute cholangitis is planned in accordance with seriousness of illness.

It is more probable that older patients who have co-existing other illnesses will have a more severe clinic form. For those who are resistant to medical treatment, biliary drainage operations like emergent endoscopic or *percutaneous* transhepatic biliary *drainage* or emergent decompression of bile ducts via T-tubes are recommended [6]. But during ERCP procedure, guide fiber/cord could not be pushed to proximal choledoch due to obstruction and thus, patient was taken to the operation. During the investigation of choledoch, a parasite was observed about 30 cm length. After removal of the parasite, a T-tube was inserted and operation was ceased. It is known that the removal of the parasite via endoscopic procedures or surgery is necessary in cases with invasion of the biliary and pancreatic duct by a parasite [1]. The parasite was sent to the parasitology laboratory after removal and was confirmed to be 28 cm long female *A. lumbricoides*. Female worms range from 20 to 35 cm in length, while males are seldom more than 30 cm long. The female worms may be as thick as a lead pencil; the males are definitely more slender and may be distinguished by an incurved tail [1]. The worm's survival is essential in the small intestine. Especially female parasites are reported to have tendency to enter narrow channels [3]. It is known that deterioration of general status of patient, sepsis and progress to shock is very fast in patients with acute cholangitis [6]. Despite receipt of empiric ciprofloxacin and supportive care, the patient's clinical condition worsened and he succumbed to overwhelming severe *E. coli* sepsis.

We conclude the the choledochal ascariasis should be considered in the differential diagnosis of cases with sudden-onset of suppurative cholangitis, whose etiology cannot be described. Suppurative cholangitis due to the parasite can be mortal especially in older people and those who have low reserve. In its treatment ERCP should be emergently applied or in case of technical insufficiency open surgery should be applied to clean biliary duct. The patient should also be treated with benzimidazoles including albendazol or mebendazol. It should be kept in mind that, when conditions favor, even a single ascaris can cause death.

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