Endoscopic Retrograde Cholangio-Pancreatographic Diagnosis and Extraction of Massive Biliary Ascariasis Presented with Acute Pancreatitis : A Case Report

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Abstract

This paper reports the case of a young female Thai patient who presented with periodic severe abdominal pains which proved to be acute pancreatitis. Conventional investigations and treatments failed to prove and improve her condition. ERCP was done on the twelfth day after admission. 3 caudal ends of living round worms were noted protruding from the papillary orifice during endoscopy. Cholangiography revealed impacted multiple round worms in the common bile duct and both intrahepatic ducts. Endoscopic extraction of the worms was done by using dormia basket and removed with endoscope. Repeated procedure was done 21 times in two and a half hours, obtaining 26 live, mature Ascaris lumbricoides varying from 13 to 24 cm in length. Repeated cholangiogram confirmed complete removal of the worms. The patient was relieved from abdominal pain immediately after the procedure, and given oral albendazole 400 mg daily for 7 days. She was discharged asymptomatic 8 days after Ascaris removal.

Key word : ERCP, Massive Biliary Ascariasis, Acute Pancreatitis, Endoscopic Extraction

Ascaris lumbricoides (round worm) affects nearly one quarter of the world population and while most infestations are asymptomatic, complications may cause death. The ova of ascaris may migrate to the liver by retrograde flow into the ducts. The adult worm is 10-30 centimeters long may occasionally invade the bile duct through the choledochal sphincter from the duodenum producing partial bile duct obstruction causing secondary cholangitis and pancreatitis(1,2). Usually one worm invades the bile duct, but in extreme cases there may be many more. Hepatobiliary ascariasis remains an uncommon disorder in Thailand. This paper reports the case of a young Thai female infested with 26 ascaris impacted in the common bile duct and both intrahepatic ducts diagnosed and treated by ERCP procedures.

CASE REPORT

A 24 year-old, married woman was admitted to the Police General Hospital because of

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severe abdominal pains for 1 day. The patient had been well until 20 days earlier, when she began to experience intermittent bouts of sharp epigastric pain radiating to the back without relation to food intake and was partially relieved by antacid.

One day before admission, severe abdominal pains recurred accompanied by fever with chill, abdominal distention and vomitting. She was treated as a case of food poisoning by a private doctor without improvement.

On physical examination the patient appeared ill, febrile, and was in acute distress with severe abdominal pains. Abdominal examination showed generalized guarding and rigidity of abdominal wall with tenderness in the right upper quardrant area, bowel sounds were hyperactive. Rectal examination was normal. The abdominal pain resolved during the examination.

Twelve hours after admission she developed severe abdominal pains with shock. The blood pressure was 60 mm Hg systolic with distended abdomen. The pains resolved within 30 minutes with normal blood pressure. Blood examinations showed normal hemogram with leucocytosis. The blood sugar, urea nitrogen, creatinine, albumin, globulin were normal. The total bilirubin was 2.9 mg/dL, direct bili rubin was 1.7 mg/dL, alkaline phosphatase was 310 IU./L, AST was 252 U/ml, ALT was 251 U/ml, amylase was 2,081 U/dL, calcium was 7.7 mg/dL and phosphorus was 2.9 mg/dL. The urine amylase was 12,916 U/dL. Ultrasonographic examination of the abdomen revealed acute pancreatitis with partial obstruction of the common bile duct and mild dilatation of intrahepatic ducts.

The patient was treated as acute pancreatitis. Parenteral antibiotics (ampicillin plus gentamicin) were given to combat associated infection. The abdominal pain resolved in severity, but intermittent pains with fever were still experienced. Episodes of pain were accompanied by abdominal distention, nausea, vomitting and fever. The pains usually subsided after 30-45 minutes. Between the attacks the patient was well.

On the fifth hospital day, liquid diet was started. The serum amylase decreased to 303 U/dL, but alkaline phosphatase increased to 794 IU/L, AST decreased to 27 U/ml, ALT 57 U/ml. While recurrent abdominal pains with fever persisted.

CT scan of the whole abdomen was performed on the seventh day and showed moderate degree intrahepatic duct and common bile duct dilatation down to distal end. Stricture at duodenal opening could not be excluded. Swelling of the small bowel mesentery could be from acute pancreatitis. Repeated serum amylase decreased to 161 U/dL, while liver function tests had no significant changes.

Without clinical improvement the patient was scheduled for endoscopic retrograde cholangiopancreatography (ERCP) on the twelfth day after admission.

During ERCP, the caudal end of 3 living round worms were noted to protrude 1 - 2 centimeters from the papillary orifice and retracted completely into the common bile duct during cannulation.

Cholangiography revealed multiple, long tubular filling defect, impacted in both right and left intrahepatic ducts and common bile duct, with normal pancreatogram (Fig. 1). Therefore, impacted multiple live ascaris in the biliary system were diagnosed. Endoscopic extraction of the worms was considered mandatory.

The worms which were seen fluoroscopically in the common bile duct were caught at their lower end using a dormia basket without sphincterotomy (Fig. 2). Three worms were removed by dormia basket with endoscope in the first session

Fig. 1. ERCP showed massive infestation of Ascaris in biliary system without pancreatic duct involvement.

Fig. 2. Removal of ascarids by dormia basket under fluorosocpy.

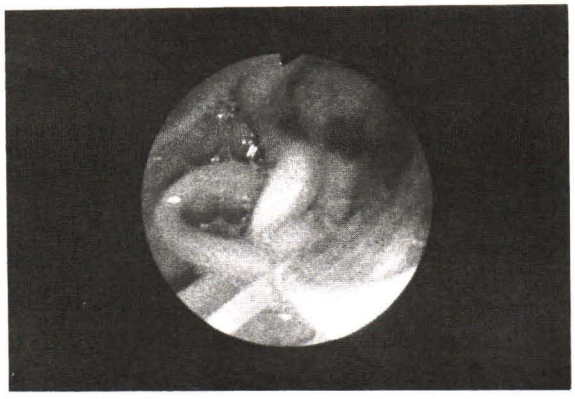

Fig. 3. 3 live ascarids are being removed by dormia basket through the papilla.

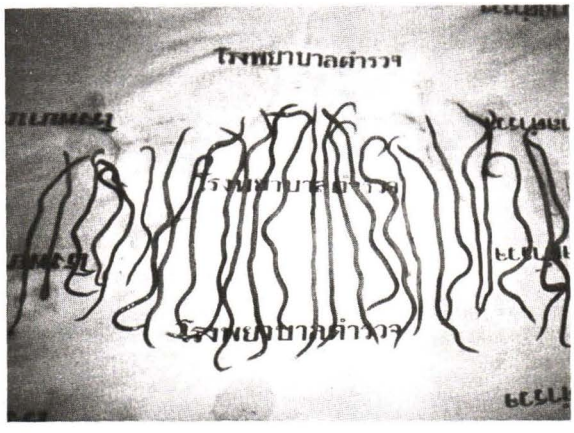

Fig. 4. 26 live ascarids removed from biliary ducts endoscopically.

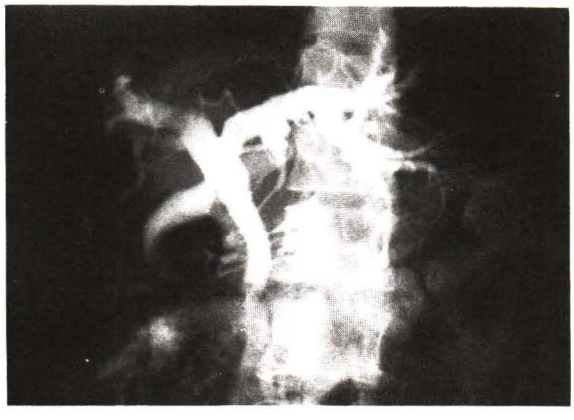

Fig. 5. Cholangiogram showed complete removal of ascarids with nearly normal CBD, dilated LHD and RHD.

(Fig. 3). Repeated procedure was done 21 times in two and a half hours, obtaining 26 live, mature Ascaris lumbricoides. Male and female worms sized between 13 to 24 cm in length (Fig. 4).

The epigastric pain of the patient was relieved immediately after complete removal of the worms. Repeated cholangiogram ten minutes later revealed nearly normal size and shape of the common bile duct, while right and left intrahepatic duct were still dilated (Fig. 5). Fever subsided to normal temperature 6 hours after the procedures. She took albendazole 400 mg daily for 7 days and was discharged asymptomatic.

DISCUSSION

Biliary ascariasis has been reported worldwide, but remains uncommon in Thailand. The diagnosis of biliary ascariasis can be made from typical findings on CT, ultrasound scan or ERCP[1-4]. But in this case, CT and ultrasound failed to identify the worms, except biliary dilatation. Impaction of 26 ascarids in the biliary ducts may cause homogeneous ductal dilatation, so that worm structures can not be identified by CT or ultrasound.

Acute pancreatitis due to Ascaris is well recognized in China[5], but rarely seen in Thailand. Mechanical blockage of the papilla by migrating

Ascaris was claimed to be the cause of pancreatitis. In this patient, 3 worms were seen emerging from the papillary orifice during the stage of duodenoscopy. Thus, blockage of the papillary lumen causing incompetent sphincter of Oddi could temporarily occur.

Acute pancreatitis in this patient may have resulted from either an obstructive bile reflux mechanism or the reflux of duodenal juice containing lysolecithin, bacterial toxin or enterokinase into the pancreatic duct *via* an incompetent sphincter of Oddi[6-9]. These cytotoxic substances can change the acinar cell membrane structure, giving rise to the abnormal release of pancreatic enzymes, which in turn initiate acute pancreatitis.

Independently of its diagnostic value, ERCP offers the possibility of treatment. Endoscopic removal of Ascaris worms has been reported using biopsy forceps or diathermy loop only when they were protruding from the orifice of the papilla into the duodenum[2,5,10-13]. Due to massive infestation with deep location in both intrahepatic ducts, dormia basket was used for extraction of the worms under fluoroscopy. Grasping of biliary Ascaris with dormia basket seem to be easier than grasping the stone. This may be due to the long, tubular, flexible structure of the worms that can be easily engaged into the basket.

Only sporadic cases of endoscopic extraction of living worms from the bile duct have been reported in the literature. This patient to our knowledge is the first case in the world in whom 26 biliary Ascaris worms were completely removed endoscopically in a single session. Complete evacuation of parasites from the bile duct is important, since prolonged presence of the worms in biliary tracts favors the development of biliary stones due to infection and bile stasis. In addition, worm fragments may act as nidus for the formation of surrounding calculi. Antihelmintic drugs were not effective within the biliary tracts.

This paper shows that duodenoscopy with ERCP is useful in diagnosis and treatment of intrabiliary ascariasis. It permits direct visualization of the worm confirmed by cholangiography and offers the treatment by extraction with dormia basket, forceps, or diathermy loops in the same session, which can relieve the symptoms more rapidly. This procedure is safe with no complications or risks even in the presence of ascaris-induced acute pancreatitis.

(Received for publication on August 20, 1997)

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การตรวจวินิจฉัยและคล้องจับพยาธิ์ตัวกลมจำนวนมากในระบบท่อน้ำดีของผู้ป่วยที่มีอาการตับอ่อนอักเสบเฉียบพลันออกมาโดยใช้การส่องกล้องอีอาร์ซีพี : รายงานผู้ป่วย

*วรพันธุ์ เสาวรส, พ.บ.**

ผู้ป่วยหญิงไทยคู่ อายุ 24 ปี มาพบแพทย์ด้วยอาการปวดท้องอย่างรุนแรงเป็นระยะๆและได้รับการตรวจวินิจฉัยในเวลาต่อมาว่าเป็นตับอ่อนอักเสบเฉียบพลัน แต่ไม่สามารถทราบสาเหตุและบรรเทาอาการปวดท้องของผู้ป่วยด้วยวิธีการตามมาตรฐานที่ใช้อยู่ได้ จึงได้นำผู้ป่วยเข้ารับการตรวจด้วย ERCP ในวันที่ 12 หลังเข้ารับการรักษา ระหว่างการตรวจพบมีส่วนปลายของพยาธิ์ตัวกลม 3 ตัวยื่นโผล่จากรูเปิดท่อน้ำดีเข้ามาในลำไส้เล็กส่วนต้น และยังเคลื่อนไหวได้ เมื่อฉีดสารทึบแสงและถ่ายภาพรังสีของท่อน้ำดีพบมีพยาธิ์ตัวกลมจำนวนมากอัดแน่นอยู่ในท่อน้ำดีแทบทุกส่วนจึงทำการคล้องจับพยาธิ์ตัวกลมด้วย dormia basket แล้วดึงออกมาภายนอกร่างกายพร้อมกล้องส่องตรวจฯได้ทำการดึงพยาธิ์ออกโดยใส่กล้อง, คล้องจับ, แล้วดึงออกพร้อมกล้องฯจนหมดรวมทั้งสิ้น 21 ครั้ง ใช้เวลา 2 ชั่วโมงครึ่ง ได้พยาธิ์ตัวกลมชนิด Ascaris lumbricoides ที่ยังมีชีวิตอยู่ทั้งสิ้น 26 ตัว ขนาดความยาวตั้งแต่ 13 ถึง 24 ซม. และเมื่อตรวจ Cholangiogram ซ้ำก็ไม่พบพยาธิ์ตัวกลมในท่อน้ำดีอีก ผู้ป่วยหายจากอาการปวดท้องทันทีหลังจากนำพยาธิ์ออกมาได้หมดแล้วได้ให้การรักษาต่อด้วยการให้ทาน Albendazole 400 mg. ต่อวัน นาน 7 วัน และกลับบ้านได้ในวันที่ 8 หลังการรักษาโดยไม่มีอาการปวดท้องอีก.

คำสำคัญ : อีอาร์ซีพี, พยาธิ์ไส้เดือนในท่อน้ำดีจำนวนมาก, ตับอ่อนอักเสบปัจจุบัน, คล้องจับพยาธิ์โดยการส่องกล้อง

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