

Removal of *Ascaris lumbricoides* from the Bile Duct Using Balloon Sphincteroplasty

A 45-year-old woman was admitted with severe right upper abdominal pain and vomiting that had continued for one day. An abdominal ultrasound examination revealed a dilated common bile duct (CBD), measuring 12 mm. In the CBD, there was an echogenic structure 8 mm in diameter casting an acoustic shadow, along with an elongated tubular structure with a central echo-free lumen (Figure 1). A diagnosis of biliary calculus with ascariasis was made. Endoscopic retrograde cholangiopancreatography (ERCP) revealed a dilated CBD with a solitary calculus in the lower part of the CBD and a roundworm above the calculus. A guidewire was passed through the ERCP catheter into the bile duct. The ERCP catheter was then replaced by a Maxforce balloon biliary dilator (Microvasive, Boston Scientific Corporation, Massachusetts) with a balloon length of 3 cm and a maximum outer diameter of 8 mm. The balloon was positioned so as to be half

inside the bile duct; it was inflated fully and kept in the fully inflated position for 60 seconds (Figure 2). Thereafter, the balloon was deflated and withdrawn along with the guidewire. A Dormia basket was then passed into the bile duct, and the stone and the roundworm were successively removed from the CBD.

The management of biliary ascariasis is simple. If a part of the worm is visible outside the papilla of Vater, it can be caught and removed. However, if the worm has totally migrated inside the bile duct, endoscopic sphincterotomy may be required to remove it (1). This technique of balloon sphincteroplasty for extracting ascariids from the bile duct has not previously been reported. The technique should be safer than endoscopic sphincterotomy, which has the dubious distinction of being the most hazardous of all ERCP procedures (2). Biliary calculi are known to be



Figure 1: Abdominal ultrasound examination showing a tubular structure in the common bile duct. A calculus is also seen. The acoustic shadowing from the calculus is better seen in the right frame.

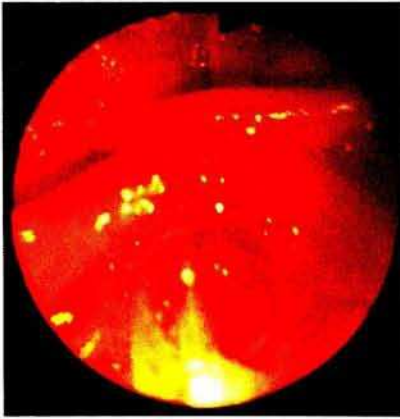


Figure 2: Endoscopic view of balloon dilation of the sphincter of Oddi.

common in patients with biliary ascariasis (3). In the present patient, too, there was a calculus in the bile duct. However, it was easily removed after balloon sphincteroplasty.

It is known that endoscopic sphincterotomy predisposes to biliary ascariasis (4), as the procedure destroys the sphincter. Balloon sphincteroplasty, by contrast, does not destroy the sphincter, and sphincter function has been noted to return after the procedure (5). Removal of ascarids by balloon sphincteroplasty instead of endoscopic sphincterotomy may therefore reduce the chances of reinvasion of the CBD by roundworms.

S. P. Misra, M. Dwivedi
 Dept. of Gastroenterology,
 M. L. N. Medical College,
 Allahabad, India

References

1. Misra SP, Dwivedi M. Endoscopy-assisted emergency management of gastroduodenal and pancreatobiliary ascariasis. *Endoscopy* 1996; 28: 629–32.
2. Sherman S, Ruffolo TA, Hawes RH, Lehman GA. Complications of endoscopic sphincterotomy: a prospective series with emphasis on increased risk associated with sphincter of Oddi dysfunction and nondilated bile ducts. *Gastroenterology* 1991; 101: 1068–78.
3. Khuroo MS, Mahajan R, Zargar SA, et al. Prevalence of biliary tract disease in India: a sonographic study in adult population in India. *Gut* 1989; 30: 201–5.
4. Khuroo MS, Zargar SA, Mahajan R. Hepatobiliary and pancreatic ascariasis in India. *Lancet* 1990; 335: 1503–6.
5. Minami A, Nakatsu T, Uchida N, et al. Papillary dilation vs. sphincterotomy in endoscopic removal of bile duct stones. *Dig Dis Sci* 1995; 40: 2250–4.

Corresponding Author
 S. P. Misra, M.D.
 Dept. of Gastroenterology
 M. L. N. Medical College
 Allahabad 211001
 India
 Fax: +91-532-611420