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ATLAS OF CHOLANGIOSCOPY WITH SPYGLASS® CHOLANGIOSCOPE SYSTEM



INTRODUCTION

This collection of images obtained via the SpyGlass Cholangioscopy System is presented to help familiarize physicians with the appearance of some common biliary findings. Images of normal biliary ductal anatomy are presented to illustrate and familiarize the reader with the appearance of a healthy, normal bile duct and to contrast with the appearance of the biliary tree in a variety of pathologic states. Common conditions such as biliary stones, primary sclerosing cholangitis (with mild, moderate, and severe inflammation) as well as several images to illustrate the varying appearance of cholangiocarcinoma have been included.

HEALTHY



Figure 1
Normal duct wall with normal bifurcation.

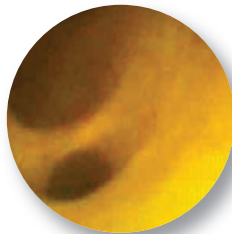


Figure 2
Cystic duct origin. The smaller lumen of the cystic duct is seen joining the common bile duct in this image. Note normal duct wall appearance.



Figure 3
Normal duct wall with normal bifurcation.

BILIARY STONES



Figure 4
Classic Mirizzi's Syndrome with a stone lodged in the cystic duct.



Figure 5
Complete occlusion of duct due to various sized stones.



Figure 6
Stone disruption with holmium laser. Notice indentations on surface of stone from firing of laser.

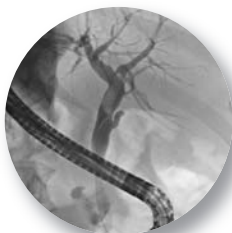


Figure 7
Cholangiogram demonstrating large, 2cm stone at the level of the biliary hilum.

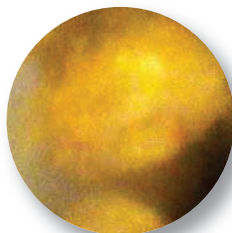


Figure 8
Same stone as in Figure 7 when viewed with SpyGlass Cholangioscope System just prior to electrohydraulic lithotripsy (EHL).

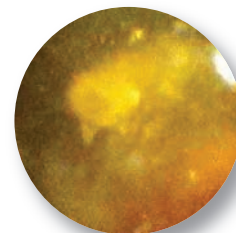


Figure 9
Same stone as in Figure 7 after undergoing EHL. Note innumerable small stone fragments in bile duct lumen and EHL probe visible at the 2 O'clock position.

CHOLANGIOCARCINOMA



Figure 10
Cholangiogram of a patient with a mid-common bile duct cholangiocarcinoma.

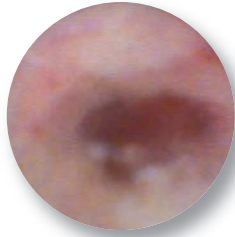


Figure 11
Same patient as in Figure 10. Cholangioscopic appearance of cholangiocarcinoma. Note circumferential stricture with visible tumor.

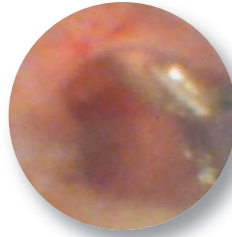


Figure 12
SpyBite® Biopsy Forceps in cholangiocarcinoma patient with PCS. Biopsy report revealed malignant tissue.

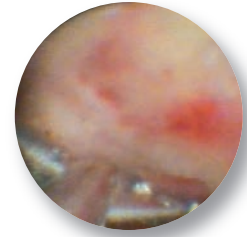


Figure 13
Cholangiocarcinoma in a patient with a completely obstructed left hepatic duct. Note the erythematous ulcerated appearance of the lesion. The lesion is undergoing biopsy with a SpyBite Forceps in this image as well.

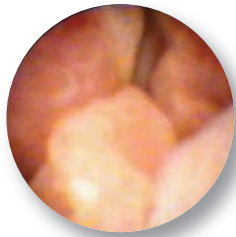


Figure 14
Biopsy of the polyps with SpyBite Biopsy Forceps came back positive for biliary papillomatosis and the patient underwent a liver resection.

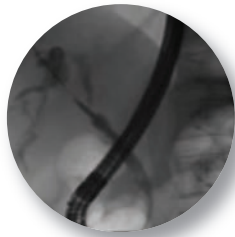


Figure 15
Stricture can be seen fluoroscopically in proximal portion of duct. Note location of SpyScope Delivery Catheter within the stricture.

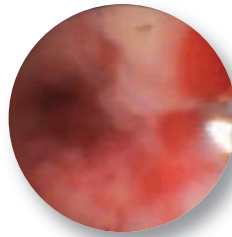


Figure 16
Nodular mucosa with villous frawns and mucin containing material. Note location of SpyBite Biopsy Forceps in duct.

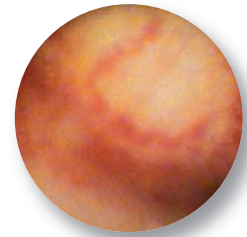


Figure 17
Fluoro showed a stricture that had a "fibrotic" appearance due to its resistance to a balloon. The SpyGlass System was used and confirmed a malignant Klatskin tumor.

PSC



Figure 18
Cholangiogram demonstrating a patient with mild Primary Sclerosing Cholangitis (PSC). Note beading and pruning of intrahepatic ducts as well as irregular extrahepatic duct walls.

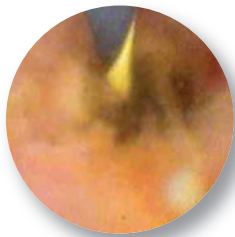


Figure 19
Mild biliary duct wall inflammation in a patient with mild PSC. Note erythematous changes and "boggy" appearance of duct walls.

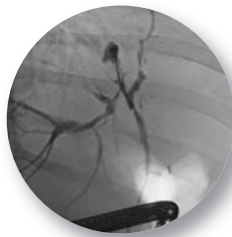


Figure 20
Cholangiogram in a patient with severe PSC. Note marked pruning of intrahepatic ducts and dominant stricture in left hepatic duct.

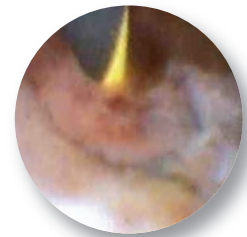


Figure 21
Same patient as in Figure 20. Severe duct wall inflammation with non-obstructing stricture.

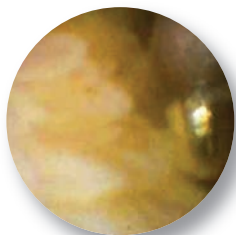


Figure 22
SpyBite Biopsy Forceps of papillary projections. Biopsy report was consistent with benign inflammation.

Images courtesy of:
 Dr. Douglas Adler, University of Utah School of Medicine, UT
 Dr. Markus Goldschmiedt, Medical Center of Plano, TX
 Dr. Bora Gumastop, St. Peter's Hospital, NY
 Dr. Kadirawelpillai Iswara, Maimonides Hospital, NY
 Dr. Sandeep Patel, University of Texas Health & Sciences Center, TX
 Dr. Adam Slivka, University of Pittsburgh Medical Center, PA
 Dr. Ed Schafer, The Nebraska Medical Center, NE

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SME13710 2.5M 2/09