SRI KOMANDURI, MD: This is a case of a 52-year-old male referred for a second opinion in regards to a diagnosis of Mirizzi's Syndrome, causing a mid-bile duct stricture. MRI demonstrated gallstones within the gall bladder, compressing the mid-CBD. Outside ERCP confirmed the stricture and brushings were negative. Of note, the CA 19-9 level was normal, and a plastic biliary stent was placed. He was subsequently referred for laparoscopic cholecystectomy.

At this time, he presented to our institution, and a repeat ERCP and endoscopic ultrasound was performed. Initially, the previously placed stent is seen. After the stent removal, an occlusion cholangiogram is performed with a biliary extraction balloon. The balloon is then inflated and properly positioned. At this time, contrast slowly injected for occlusion cholangiogram. Immediately, it is noted that the left and right hepatic duct systems are prominent. Upon withdrawal of the balloon, a concentric mid-common bile duct stricture is noted.

Linear endosonography demonstrates thickening of the common bile duct is seen here, just above the portal vein. As the stricture is followed to the cystic duct, a large amount of sludge is noted. The cystic duct is then slowly traced to the gallbladder where compression of the common bile duct is seen in the area of the stricture. Within the gallbladder, a large amount of sludge and a large calcified gallstone are noted. At this time, the single operator peroral digital cholangioscope, or Spyglass DS is introduced across the papilla, into the common bile duct.

After advancement to the proximal common hepatic duct, a normal bifurcation in the hepatic hilum is seen here. Inspection of the mucosa proximately appears normal. Further examination of the proximal intra-hepatic systems demonstrates normal biliary mucosa. As the cholangioscope is slowly withdrawn, the compression from the gallbladder is seen. However, beyond standard extrinsic compression, abnormal vasculature is also appreciated with tumor vessels, as seen here.

This again, lies in the area of the common bile duct stricture seen fluoroscopically, and the compression by the gallbladder as seen on endosonography. The tumor vessels extend approximately 1 to 2 centimeters, again, correlating with stricture length. For further tissue acquisition, the SpyBite forceps are introduced through the cholangioscope and advanced into the common bile duct. Again, noted here is the strictured area with abnormal tumor vessels.

The SpyBite forceps are easily advanced through the cholangioscope and are seen here at the 6 o'clock position. The forceps are positioned in the area of tumor vessels, and the biopsy is performed. A second sample is then obtained. SpyBite forceps, again, pass through the scope in the 6 o'clock position, targeting the tumor vessels in the area of the stricture. Finally, a plastic biliary stent is replaced under fluoroscopic guidance, as seen here, with excellent decompression of the biliary tree.

The cholangioscopic-directed biopsies using the SpyBite forceps demonstrated infiltrating carcinomas suggested of gallbladder origin. The patient was then referred for a complete oncological resection instead of laparoscopic cholecystectomy in this case. The use of digital cholangioscopy significantly changed the management of this patient and avoided a second surgical intervention. Overall procedural time using digital cholangioscopy was increased by only seven minutes. The use of single operator digital peroral cholangioscopy or Spyglass DS should be considered for the evaluation of indeterminate bile duct strictures.