Percutaneous antegrade short cholangioscope-aided extracorporeal shock-wave lithotripsy, cholangioplasty, and biliary decompression for acute perforated cholecystitis and septic shock secondary to choledocholithiasis

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Clinical history: A 67-year old male presented with two weeks of abdominal pain and developing sepsis (WBC 50k cells/mm3, total bilirubin 6.5 mg/dL, lipase 777 U/L). CT demonstrated choledocholithiasis, severe biliary ductal dilatation, and perforated gallbladder (Figure 1). Clinically, patient was in cholangitis-associated septic shock.

Treatment and results: Endoscopic retrograde cholangiopancreatography was unable to be performed due to unavailable gastroenterologist. Patient was taken urgently to the interventional radiology suite. Percutaneous transhepatic cholangiogram demonstrated perforated gallbladder with small residual gallbladder neck, short dilated cystic duct, and marked biliary ductal dilatation secondary to obstructive choledocholithiasis (Figure 2A). Transhepatic transcholecystic internal/external biliary drain was placed for biliary diversion/decompression. Two weeks later, percutaneous antegrade cholangioscope-aided extracorporeal shock-wave lithotripsy and cholangioplasty was performed (Figure 2B, 2C). Following intervention, cholangiography demonstrated no residual common bile duct stones or obstruction (Figure 2D). Patient has recovered from his acute illness, and is currently awaiting cholecystectomy.

Discussion: Choledocholithiasis treatment varies according to subspecialist skills and availability. Percutaneous intervention is indicated for patients with high risk for complications, altered anatomy, heavy stone burden, and unsuccessful or unavailable endoscopic/surgical treatment. Our case highlights the importance of the interventional radiologist maintaining technical competence with cholangioscopy, lithotripsy, and basket retrieval for cholelithiasis and choledocholithiasis.

Key points: Early biliary decompression in septic shock improves patient morbidity/mortality. Cholangioscope-aided antegrade treatment for choledocholithiasis is a vital skill for interventional radiologists, and is indicated in select patients.

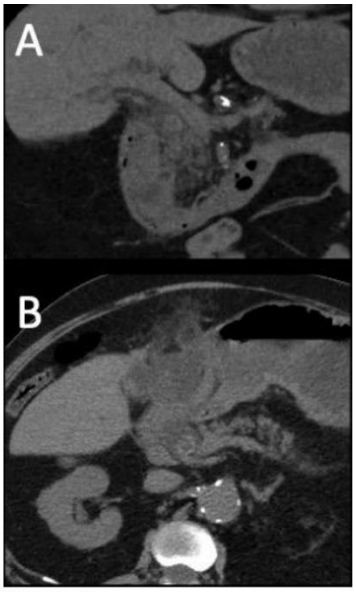

Figure 1.

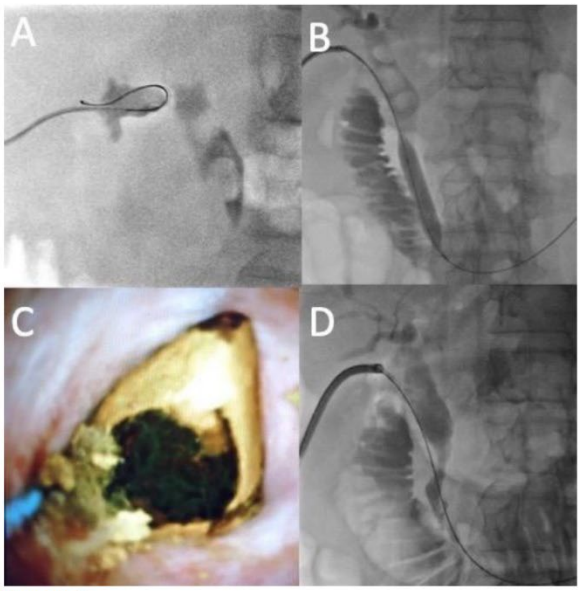

Figure 2.