A Surprising Cause of Biliary Tree Obstruction

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INTRODUCTION

- Post-cholecystectomy clip migration (PCCM) has been described in the literature as a cause of biliary tree obstruction[1-3]
- A Hem-o-lok clip may be found in the biliary tree years after cholecystectomy[4]
- The clips may act as a nidus of infection and precipitate biliary stones which can further obstruct the biliary tree[5]

CASE REPORT

Patient History

- 74-year-old male
- PMH: Diabetes, HTN, HLD, arthritis, osteoporosis
- PSH: Roux en Y gastric bypass

Hospitalization #1

- CC: abdominal pain, presents with sepsis
- Diagnosed with acute cholecystitis and choledocholithiasis
- Temporized with cholecystostomy tube

Hospitalization #2

- Transferred to a tertiary care center
- AST 414, ALT 457, T bili 1.4, WBC 13.12
- Taken to the OR
  - Removal of cholecystostomy tube
  - Laparoscopic cholecystectomy
  - Intraoperative cholangiogram demonstrated persistent filling defects
  - Transcystic CBD exploration with 3 stones removed
  - Completion cholangiogram confirmed duct clearance and two Hem-o-lok clips were placed on the cystic duct stump

Hospitalization #3 (two weeks later)

- CC: recurrent abdominal pain, fevers
- AST 39, ALT 107, T bili 1.0, WBC 7.51

CASE REPORT (continued)

- MRCP: fluid collection in the gallbladder fossa and filling defect in distal CBD
- Interventional Radiology:
  - Placed a drain in the gallbladder fossa and a Percutaneous Transhepatic Cholangiogram (PTC) with internal and external drainage after a cystic duct stump leak was identified
  - The PTC drain tract was dilated to allow passage of a cholangioscope where a retained Hem-o-lok clip was identified and removed (**Figure 1**)
  - Coil embolized the cystic duct stump and used N-butyl cyanoacrylate to close the bile leak (**Figure 2**)
  - Post-procedural course was uneventful and in follow up all drains have been removed and he is doing well

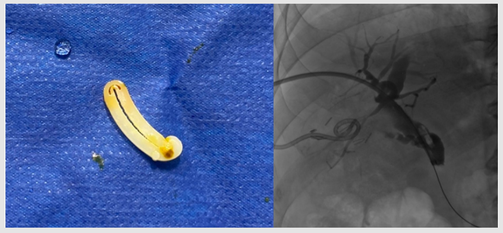


Figure 1. The hem-o-lok clip causing CBD obstruction.

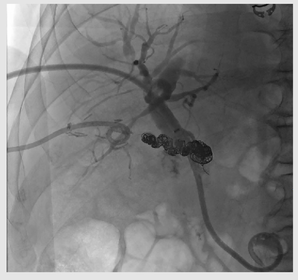


Figure 2. The coils act like scaffolding for occlusion with N-butyl cyanoacrylate glue.

DISCUSSION

- New techniques have been described to embolize the cystic duct or duct of Luschka as treatment for iatrogenic bile leak after cholecystectomy[6] or after hepatectomy[7]
- The source of the leak may be embolized using metallic coil and N-butyl cyanoacrylate[7]
- One study demonstrated complete resolution of all bile leaks for a cohort of seven patients[8]

CONCLUSION

This case highlights that Hem-o-lock clip migration into the biliary tree may be a cause of biliary tree obstruction and leak. RYGBP adds another level of complexity to the management of CBD obstruction and biliary leak and often times creative measures are required for their treatment. This case report emphasizes the importance of collaboration between general surgery and interventional radiology to intervene in this uncommon situation.

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