Title: Covered Metal Stent for Intractable Biliary Stricture and Bile Leakage after Cholecystectomy : A Case Report

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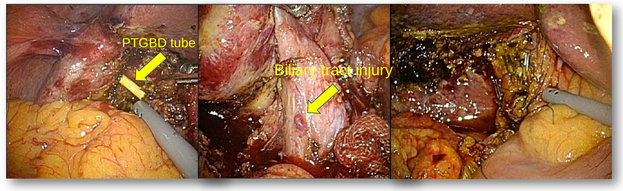
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Background

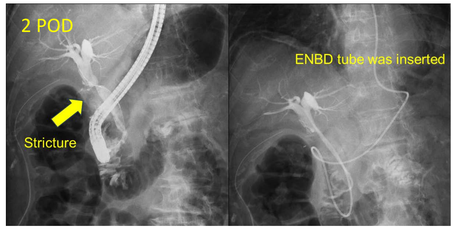
Covered metal stents are usually used only for malignant obstructive jaundice in Japan. In case of operative biliary tract injury, plastic stents are mainly used and metal stents are not usually applicable for this kind of benign strictures. We present a case utilizing a covered metal stent for intractable stricture and bile leakage after cholecystectomy and review the relevant literature.

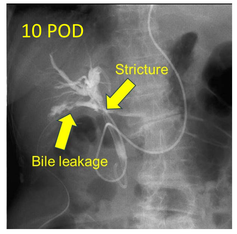
Case presentation

A 77-year-old female underwent laparoscopic cholecystectomy 3 months after percutaneous transhepatic gallbladder drainage (PTGBD). Biliary tract injury was observed during surgery due to dense adhesion caused by cholecystitis. Although suture closure was attained intraoperatively, bile leakage relapsed on the second postoperative day. Endoscopic retrograde cholangiopancreatography (ERCP) was performed and endoscopic nasobiliary drainage (ENBD) tube was placed for depressurizing and drainage of the biliary tract. Since her condition did not improve and the biliary stricture was admitted, a covered metal stent was placed to prevent leakage and expand the stricture 3 weeks postoperatively. Her condition improved and she was discharged at 1 month after the opeartion. The covered metal stent was removed by ERCP at 5 months after stent placement, bile leakage and biliary stricture were improved, and endoscopic retrograde biliary drainage (ERBD) tube was placed. The course after removal of the covered metal stent has been uneventful, there is no recurrence of bile leakage or biliary stricture, and the ERBD tube was removed 7 months after stent placement. We confirmed that there was no dilation of intrahepatic bile duct on MRCP after 10 months after operation.

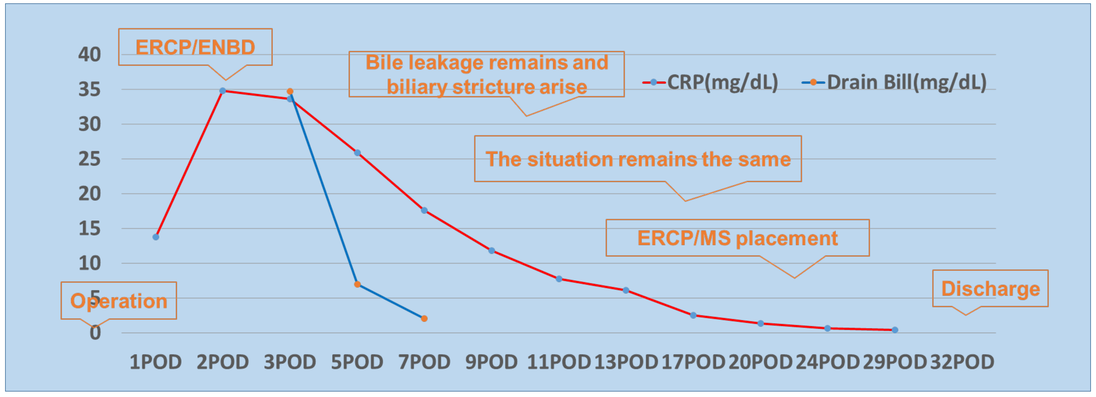


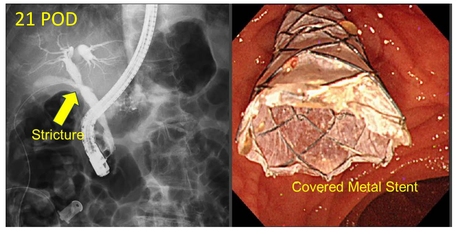
- Significant inflammation surrounding the gall bladder
- A PTGBD tube was noted
- Bile duct injury was admitted during the dissection of Calot triangle
- Suture repair was made

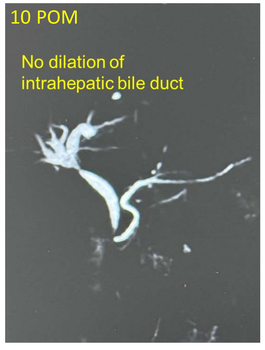












Conclusions

We experienced a case of using covered metal stent for intractable biliary stricture and bile leakage after cholecystectomy.

Discussion

☐Causes of benign biliary stricture

Inflammation	Post operative stricture	Others
Chronic pancreatitis	Cholecystectomy	Trauma
Primary sclerosing cholangitis	Liver transplant	Ischemia
IgG4-related sclerosing cholangitis	Liver resection	Radiation
Gallbladder stone (Mirizzi Synd.)		

→The biliary stricture in this case is thought to be the result of the bile leakage.

- Plastic stents:
  - ☐Easy to insert and remove
  - ☐Need several ERCPs (dilate, deploy stents, up-size, remove)
  - ☐80-90% efficacy for postoperative strictures

→Mainly used for benign biliary stricture

- CMS FCSEMS:
  - ☐Single ERCP and fully covered
  - ☐Difficultiees in removal

→Mainly used for malignant stricture
→Not applicable to insurance in Japan

- Metallic stent vs. Plastic stent for benign biliary stricture

☐cSEMS were not inferior to multiple plastic stents when used as the initial treatment strategy but achieved resolution with significantly fewer ERCPs.

☐There wer no failures to remove cSEMS at the first follow-up ERCPs (6-month)

Gregory A. et al: Effect of Covered Metallic Stents Compared With Plastic Stents on Benign Biliary Stricture Resolution. JAMA. 2016 March22; 315(12): 1250-1257. doi: 10.1001/jama. 2016.2619

→Metallic stents should be considered an appropriate option.

Placing multiple plastic stents is the standard approach for this kind of case

In this case…

MS was selected for intractable postoperative biliary stricture and bile leakage

→MS could be an option for benign biliary stricture