

Repair of Common Bile Duct Injury with the Round and Falciform Ligament after Clip Necrosis: Case Report

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ABSTRACT

Occasionally, as abdominal surgeons, we are confronted with common bile duct injury noted during video laparoscopic or open cholecystectomy. Usually this is solved by endoscopic retrograde cholangiopancreatography (ERCP) sphincterotomy and stent, or enteric bypass, suture repair and tube drainage. However, after such procedures, there is a significant number of patients with postoperative stenosis.

Another alternative to repair common bile duct injury and correct postoperative stenosis is using the round and falciform ligament as circumferential patch. Due to their closeness to the common bile duct and their adequate blood supply, they make a perfect autologous biological graft.

Key Words: Stenosis, Common bile duct injury, Laparoscopic cholecystectomy.

CASE PRESENTATION

A 32-year-old female was brought to the emergency department at St. Mary Medical Center (affiliated to UCLA of Long Beach, CA), who had laparoscopic cholecystectomy in another hospital by another surgeon. Seven days postoperatively, she became jaundice and had abdominal pain and sepsis. ERCP by gastroenterology was performed, but the surgeons were unable to insert a stent (**Figure 1**). A clip noted across the common bile duct was leaking bile, and bile peritonitis developed. The patient was then taken to surgery. The surgical clip was removed, but extensive necrosis 4 cm in longitudinal and circumferential length had developed. The common duct was small, approximately 3 mm; consequently, it proved difficult to do a Roux-en-Y enteric bypass. It could not hold a "T" tube without leaking bile due to the extensive necrosis. Previous experiences of anatomical dissection and research led me to believe that patching with round and falciform ligament would help the patient.^{1,2} With proper retraction, the round ligament was taken down with cautery. It was sutured with pro-line 5-0 near the injury of the common bile duct, side-to-side to the round and falciform ligament circumferential patching a "T" tube No. 10 French placed (**Figure 2**) and reinforced using 5-0 chromic interrupted sutures and tacked down with omentum (**Figure 3**).

The patient did well postoperatively. A "T" tube cholangiogram after six weeks of surgery noted a normal-appearing common duct. Subsequently, the "T" tube was removed three months postoperatively, and ERCP after five months showed a common duct without stenosis as presented in the X-ray films (**Figure 4**).

CONCLUSION

In this particular patient, I did not have a better choice than to use a standard procedure, such as ERCP stent, choledoco or hepatic jejunostomy or suturing the common duct with a "T" tube. The repair of the common duct injury using a round and falciform ligament after a clip necrosis was successful, and the patient was released without symptoms or stenosis of the common duct after 12 months of follow-up. A definite evaluation of the procedure must await a longer period of follow-up and study.

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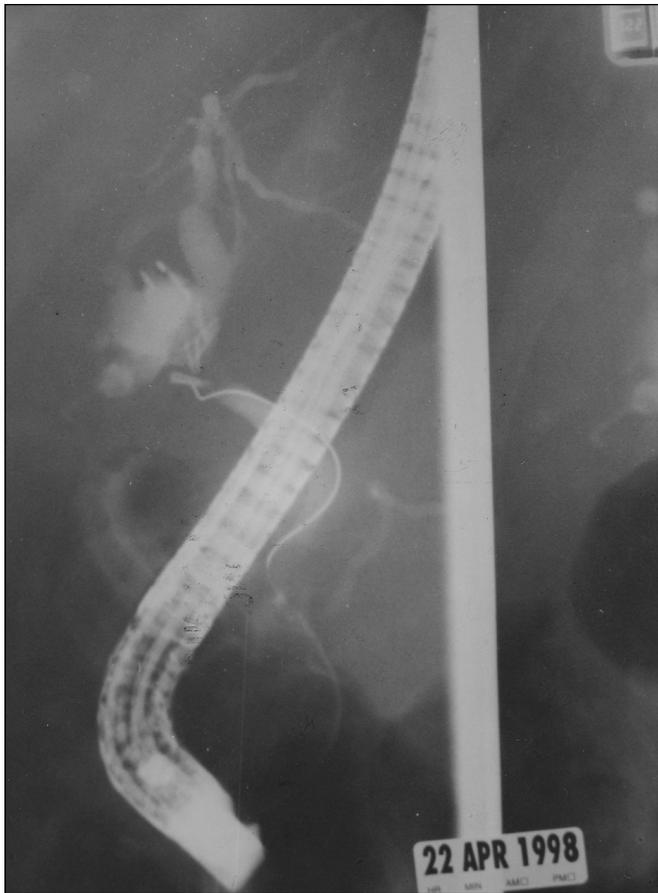


Figure 1. ERCP unable to pass the stent because there is a clip across the common duct.

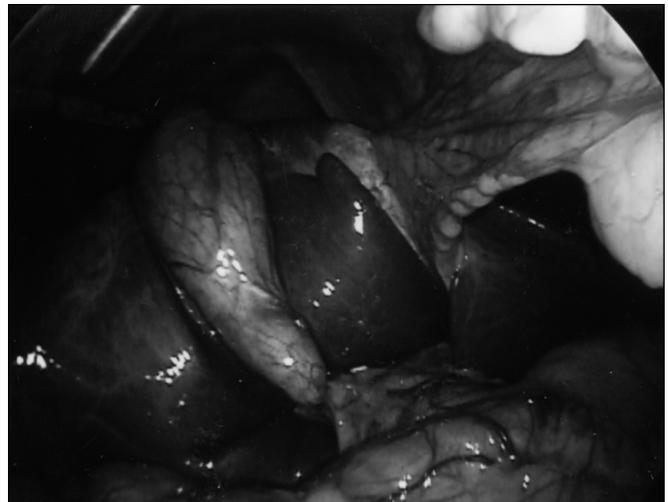


Figure 2. Video laparoscopic anatomical photograph of the round and falciform ligament so close to the common bile duct it is able to overlap. With its own blood supply, it makes a perfect autologous graft.



Figure 3. Graphic of the side-to-side anastomosis using proline 5-0, running suture stented with a "T" tube no. 10 French, in this particular patient.

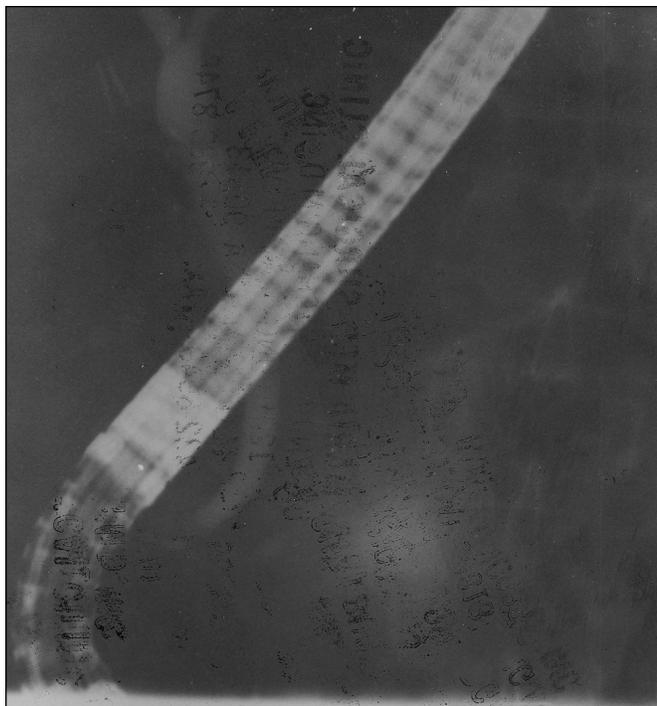


Figure 4. ERCP after five months without stenosis. Patient asymptomatic.

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