



**Creation of a Neo-Bile Duct in a Patient with Left Hepatic Duct  
Clipping and Right Hepatectomy**

Rahil Desai, DO; Ahamed Khalyfa, DO; Navkiran Randhawa, DO; Varshita Goduguchinta, DO; Mahnoor Inamullah, MD; Kamran Ayub, MD, MRCP, FASGE\*

**\*Correspondence to:** Kamran Ayub, MD, MRCP, FASGE. 422 Luthin Road, Oak Brook, IL 60523, USA.

**Copyright**

© 2024 **Kamran Ayub**. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Received: 23 March 2024

Published: 29 March 2024

DOI: <https://doi.org/10.5281/zenodo.10902376>

**Abstract**

*Colorectal cancer, the third most common cancer in the US, can lead to liver metastasis if not detected early. Hepatic lobe resection can result in Iatrogenic bile duct injuries (IBDI). A 64-year-old female with sigmoid colon cancer underwent right hepatectomy, but the left hepatic duct was inadvertently clipped and transected. Attempts at an ERCP and percutaneous transhepatic biliary drain (PTBD) were unsuccessful, leading to the collapse of the hepatic ducts. An EUS guided hepaticoduodenostomy was attempted, and the left hepatic duct was punctured near the hilum using a 19G needle and a 0.35 450 cm guidewire. The tract was dilated using a 7.5F Soehendra dilator and balloon dilation to 4 mm using a Hercules balloon. An 8 mm x 8 cm Viabil Stent was placed into the left hepatic duct with excellent drainage, and the drain was removed in one week. The patient's JP drain output dropped from 400 cc to 25 cc in the first 24 hours, and the drain was removed in one week. EUS guided hepaticoduodenostomy is a successful treatment for IBDI when ERCP and PTBD are unsuccessful in obtaining access to a collapsed biliary system.*

**Key words:** *Colorectal Cancer, Common Cancer, Liver, Metastasis, Collapsed Biliary system*

**Introduction:**

Colorectal cancer is the third most common cancer in the US, and if not detected early, can have metastasis to the liver. Many patients undergo hepatic lobe resection for solitary metastasis. This surgery can result in Iatrogenic bile duct injuries (IBDI) [1,2,3]. We present a video case of a patient with IBDI after a right hepatectomy who was successfully treated with hepaticoduodenostomy using EUS guidance.

---

**Case/Methods:**

A 64-year-old female with a PMH of sigmoid colon cancer s/p left hemicolectomy with metastasis to the right lobe of the liver presents with jaundice and early satiety. The patient underwent right hepatectomy, and the left hepatic duct was inadvertently clipped and transected. Attempts at an ERCP were unsuccessful; the patient was referred for percutaneous transhepatic biliary drain (PTBD). The hepatic ducts were completely collapsed and placement of a PTBD was unsuccessful. An EUS guided hepaticoduodenostomy was attempted. An EUS scope was passed into the duodenal bulb. The left hepatic duct was identified and punctured near the hilum using a 19G needle and a 0.35 450 cm guidewire was passed. The tract was dilated using 7.5F Soehendra dilator, followed by balloon dilation to 4 mm using a Hercules balloon. An (8 mm x 8 cm) Viabil Stent was placed into the left hepatic duct with excellent drainage. The patient's JP drain output dropped from 400 cc to 25 cc in the first 24 hours. The drain was removed in one week, and the patient has done well with the newly created hepaticoduodenostomy. IBDI during surgery can have severe complications, often requiring liver transplantation or hepaticojejunostomy [4,5].

video represents:

To view [vedio](#)

The liver is being punctured using a 19G needle and entered into the left hepatic duct. The patient does not have a right lobe of the liver. The left hepatic duct branch was then cannulated with the wire through the 19G needle.

We are now dilating the tract with a 4 x 7.5F Sohendra dilator over the 0.35 450 cm guidewire. On the fluoroscopy image on the right, the Sohendra dilator with the marker is present in the left hepatic duct.

After dilating with the Sohendra dilator, a 4 mm Hercules biliary balloon was passed over the wire from the duodenal bulb in to the left hepatic duct. The tract was dilated to 4mm or 12F. The balloon can be visualized on fluoroscopy on the right side.

After dilating the tract, a Viabil stent 8 mm by 8 cm was passed in to the left hepatic duct and deployed successfully as shown on fluoroscopy on the right.

A balloon was passed through the Viabil stent to perform a balloon occlusion. A cholangiogram was performed to see if the stent is in the right place and to see if the left hepatic system is being filled

appropriately. As seen here, the left system filled well.

## Conclusion

Our video presentation demonstrates EUS guided hepaticoduodenostomy when ERCP and PTBD are unsuccessful at obtaining access to a collapsed biliary system and would have otherwise required major surgery.

## References

1. Pesce A, Palmucci S, La Greca G, Puleo S. Iatrogenic bile duct injury: impact and management challenges. *Clinical and Experimental Gastroenterology*. 2019;Volume 12:121-128. doi:<https://doi.org/10.2147/ceg.s169492>
2. Seeras K, Qasawa RN, Kashyap S, Kalani AD. Bile Duct Repair. PubMed. Published 2023. Accessed July 31, 2023. <https://www.ncbi.nlm.nih.gov/books/NBK525989/>
3. Meek J, Fletcher S, Crumley K, Culp WC, Meek M. Percutaneous rendezvous technique for the management of a bile duct injury. *Radiology Case Reports*. 2018;13(1):175-178. doi:<https://doi.org/10.1016/j.radcr.2017.11.004>
4. Philip, E. A. J. Rauws, Vermeulen MC, Marcel, Gouma DJ, Bruno MJ. Endoscopic treatment of post-surgical bile duct injuries: long term outcome and predictors of success. 2007;56(11):1599-1605. doi:<https://doi.org/10.1136/gut.2007.123596>
5. Righetti J, Rekman J, Alseidi A. Rendezvous Procedure as an Alternative Treatment Strategy for Type C Bile Duct Injury Postcholecystectomy. *ACS Case Reviews in Surgery*. 2020;2(6):19–24.

