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Endoscopic Retrograde Cholangiography Using a Colonoscope in a Pediatric Liver Transplant Patient with Roux-en-Y anatomy

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Introduction

- Biliary ductal sequelae including occlusions, strictures, leaks and necrosis frequently complicate pediatric liver transplantation (PLT).
- The underlying etiology includes prolonged intraoperative ischemia and postoperative arterial inflow obstruction
- In adults, endoscopic retrograde cholangiography (ERC) is commonly used.
- In pediatrics, due to the combination of small patient size and complexity of Roux-en-Y anastomotic techniques, ERC has been described as difficult or virtually impossible.
- Endoscopic management of biliary complications in pediatric patients with Roux-en-Y anatomy has not been previously reported in the pediatric population.
- Here in we report the first pediatric case of performing ERC in a PLT patient with Roux-en-Y anastomosis.

Presentation

- 8-year-old with history of unresectable hepatoblastoma, who underwent liver transplantation with Roux-en-Y anastomosis at the age of 15 months.
- Transplant complicated by hepatic artery spasm and biliary strictures requiring biliary internal/external drain placement by Interventional Radiology (IR) twice in the 1st year Post-transplant.

- He has recurrence of biliary strictures at the age of 7 at the choledocho-jejunal anastomosis and an attempt for placing an internal/external drain by IR was unsuccessful.
- Two months later IR was able to place an 8.5 Fr drain that was subsequently upsized to 12 Fr drain after 2 months then removed after another 2 months
- Stricture recurred again and IR attempt for drain placement was unsuccessful despite multiple attempts.
- Patient referred for an ERC:
 - Pentax EC-2990Li with a 2.8mm channel was initially used with successful access to the right hepatic duct with a standard sphincterotome and the stricture was dilated. A 7Fr stent couldn't be passed through the channel.
 - Scope was switched to Pentax EC-3490LK with 3.8mm channel and a 7Fr stent successfully placed.

Discussion

- Biliary complications post liver transplantation have been reported to be 20-38% in PLT with higher rate in duct-to-duct anastomosis vs hepato-jejunal anastomosis, (most common bile leaks & strictures).
- Endoscopic management of biliary complications is preferred over percutaneous route and has been increasingly used in Roux-en-Y patients.

- Studies have shown that Endoscopic management of biliary complications is safe and effective and can minimize the need of post transplant biliary surgery .
- The ideal endoscope and technique for ERC in Roux-en-Y patients remains unclear.

Conclusion

- Endoscopic management of biliary complications in PLT with Roux-en-Y anatomy is possible and considered as a safer alternative to percutaneous management

Image



ERC image showing cannulation of the right hepatic duct through anastomotic stricture

References

