



Traumatic PD Disruption & ERCP: When Failure is not an Option!

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Keywords

ERCP; Pancreatic duct disruption

Introduction

Selective Main Pancreatic Duct (MPD) cannulation can be challenging in cases of Disconnected Pancreatic Duct Syndrome (DPDS) and stricture of the MPD. Double guidewire technique is often used for difficult biliary cannulation. In this technique, a guidewire in the MPD is left in place and selective biliary cannulation is achieved over the wire in the MPD. Shamah and Okolo described a “reverse” double wire technique (Figure 2) in 2017 in cases in which MPD access was highly desirable [1]. However, there is limited guidance in situations where selective MPD cannulation is not achieved despite using reverse double wire technique. We reviewed ERCP database of a busy HPB centre, identified and describe two cases of PD disruption secondary to trauma where double wire technique was unsuccessful, and PD cannulation was successfully achieved with after deploying a biliary stent (Figure 3). We propose a stepwise approach to attempt difficult selective PD cannulation (Figure 1).

Case Presentation

A 27-year-old man presented with a severe abdominal pain following a road traffic accident. CT reported pancreatic injury with MPD disruption. He did not settle with conservative treatment and surgical team referred him for ERCP and MPD stenting. During the procedure selective MPD cannulation was unsuccessful with repeated inadvertent Common Bile Duct (CBD) cannulation. Reverse double wire technique (Figure 2) was attempted but MPD cannulation could not be achieved. Biliary sphincterotomy was then performed and a 10 French straight biliary plastic stent was placed in the CBD. The MPD opening dropped at 4° clock position and MPD was successfully cannulated and a 5 French single pigtail plastic stent without flange deployed successfully. Patient improved clinically and discharged home 7 days later.

Second case was of 31-year-old man with a deliberate self-harm. He had stabbed himself with a sharp knife and presented with severe abdominal pain. Imaging demonstrated pancreatic injury with MPD disruption. He was referred for an urgent ERCP and MPD stenting. The selective MPD cannulation was also not successful in this case despite attempting a reverse double wire technique. Repeated attempts caused ampullary edema. We therefore attempted “hitch and ride” technique with slotted cannula but remained unsuccessful. Biliary sphincterotomy was then performed and a 10 French straight biliary plastic stent was placed. PD cannulation was then successfully achieved (Figure 3) [2]. This was followed by deployment of a 5 French single pigtail plastic stent without flange. Patient was subsequently managed in surgical HDU. He also made uneventful recovery and discharged home 10 days later. The MPD stents were removed 6 weeks after the index procedure.

Discussion

Biliary and MPD cannulation is a prerequisite for endotherapy. This can be challenging at times especially in cases of duct disruption. There are similarities in MPD disruption and post-operative bile leak where the desired duct is of thin caliber and access is challenging. In this report, we presented two cases where biliary sphincterotomy and biliary stent placement was performed to facilitate MPD cannulation “under” the stent. This approach can be useful to achieve MPD cannulation when traditional methods including “Hitch & Ride” technique with slotted cannula and reverse double wire are not successful after 3 to 5 attempts or 5 min to 10 min. The CBD stent can then be removed after successful MPD cannulation. Based on our experience, we propose an algorithm for difficult PD cannulation (Figure 1).

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Received Date: 14 Dec 2021

Accepted Date: 28 Dec 2021

Published Date: 31 Dec 2021

Citation:

Tehami N, Wright M. Traumatic PD
Disruption & ERCP: When Failure is
not an Option!. *J Gastroenterol Hepatol
Endosc.* 2021; 6(4): 1106.

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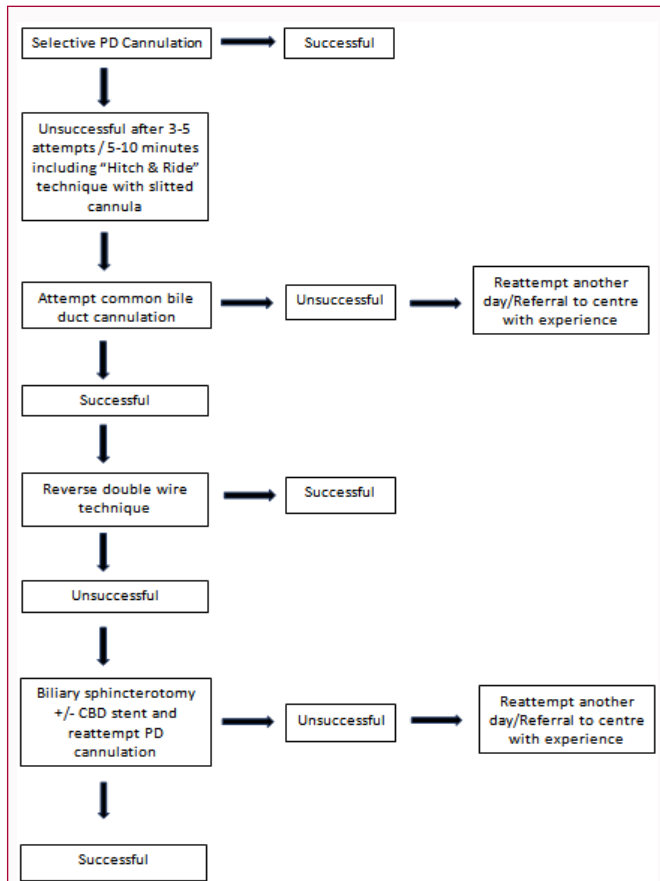


Figure 1: Algorithm for selective Pancreatic Duct (PD) cannulation.

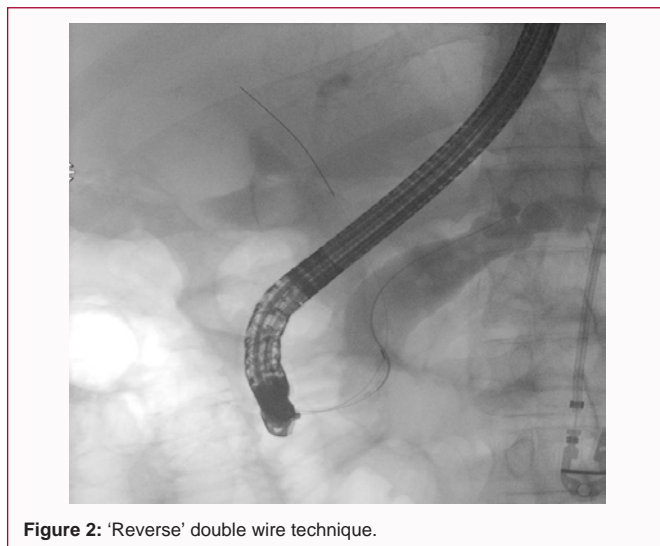


Figure 2: 'Reverse' double wire technique.

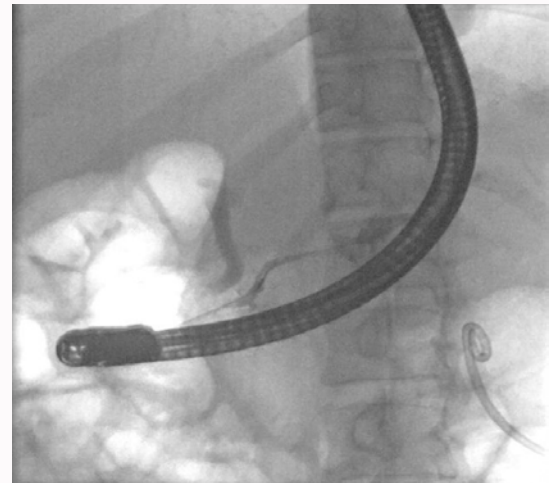


Figure 3: PD disruption-cannulation achieved after initial CBD cannulation.

Conclusion

We propose a novel algorithm for MPD cannulation and endotherapy which has not been described in the literature before. We believe that MPD can be safely achieved by following our proposed algorithm. This algorithm should be applicable to any planned or urgent therapeutic MPD interventions.

References

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2. Vila JJ, Carrascosa J, Fernández-Urién I, Yeaton P, González G, Aburruza L, et al. Biliary hitch and ride technique for blind pancreatic duct cannulation. *Endoscopy.* 2020;53(01):E29-30.