

# Endoscopic Hemoclip Application to a Dieulafoy Lesion within a Periapillary Diverticulum

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## Introduction

Dieulafoy lesions are a rare but potentially fatal cause of Upper Gastrointestinal Bleeding (UGIB). They are commonly located within the stomach with only 15% of these lesions originating from the duodenum. [1] Endoscopic intervention for bleeding Dieulafoy lesions situated within a periampullary diverticulum are technically challenging, chiefly attributable to the small size of the lesion and its obscure location. Here, we report a case of successful hemoclip application to a Dieulafoy lesion located within a periampullary diverticulum.

## Case Report

A 62 year old male presented to our centre with two episodes of melenic stool followed by a syncopal attack. He had a past medical history significant for Diabetes Mellitus, Hypertension and Cerebrovascular accident for which he was on oral Aspirin 150 mg OD. On assessment in the Emergency Department he appeared pale. His pulse was 90/minute with a blood pressure of 125/86 mmHg. The haemoglobin level was 8.7 g/dL.

We performed an urgent Endoscopy using a forward-viewing endoscope (GIF-1TH 190; Olympus, Tokyo, Japan). Large clots and fresh blood were seen in the duodenum. Following removal of the clots, fresh blood was noted to extrude from a periampullary diverticulum. Decision was made to switch to a duodenoscope (TJF-Q180V J; Olympus, Tokyo, Japan) to improve visibility and access to the periampullary diverticulum [Figure 1]. A Dieulafoy lesion was identified at the dome of the diverticulum [Figure 2]. The area surrounding the lesion was injected with epinephrine [Figure 3]. In addition to aiding with

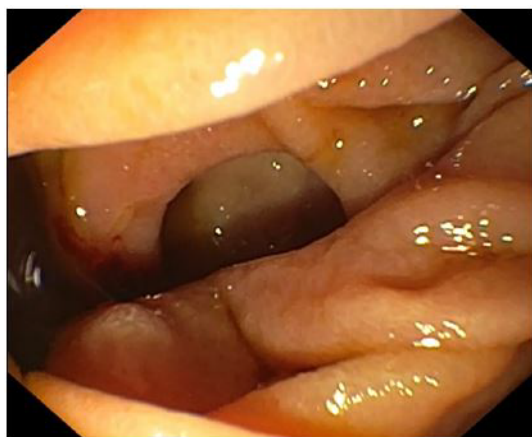


Figure 1: Duodenoscope view of the periampullary diverticulum.

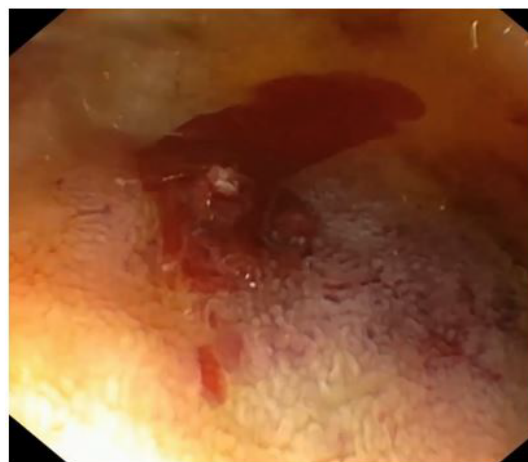


Figure 2: Bleeding Dieulafoy lesion at the dome of the diverticulum.

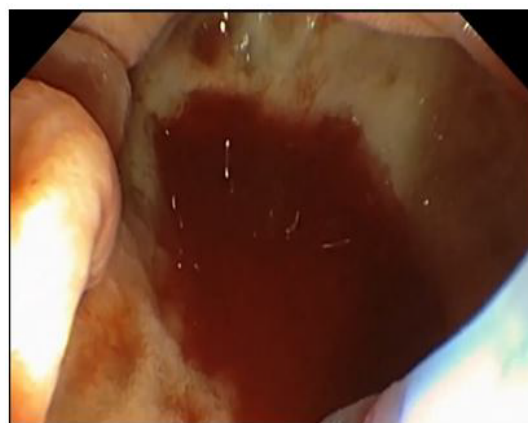


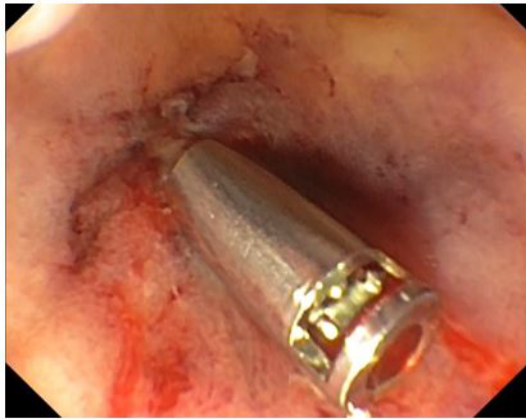
Figure 3: Epinephrine injection adjacent to the bleeding Dieulafoy lesion.

hemostasis the submucosal bleb created by the epinephrine injection would enhance ease of clip deployment.

A 12 mm Mednova hemoclip (Zhejiang Chuangxiang Technology Co. Ltd, Zhejiang Province, China) was advanced through the duodenoscope working channel and using the elevator, the tip of the clip was brought en face with the bleeding lesion. We positioned the hemoclip device at a 45° angle to the tissue plane

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**Figure 4:** Post hemoclip deployment.

to avoid inadvertently clipping the Common Bile Duct (CBD). Intermittent suction was performed to remove remnant blood and to allow an adequate amount of tissue to be captured during hemoclip deployment. The clip was successfully deployed and hemostasis was secured [Figure 4]. Three days later, a second look EGD was performed prior to recommencement of Aspirin. EGD findings revealed a healing lesion with the hemoclip in situ. Patient was discharged well the next day.

### Discussion

The advent of novel endoscopic modalities in the treatment of Upper Gastrointestinal Bleeding (UGIB) has changed the landscape of its management. However, achieving haemostasis in the rare occurrence of a bleeding periampullary diverticular Dieulafoy lesion has remained a technically demanding task.

Previous reports have described the use of a duodenoscope and the application of a hood to improve visualisation when confronted with a periampullary diverticular bleed.<sup>[2-5]</sup> As illustrated in our case, to attain better access to the lesion, we switched to a duodenoscope and this revealed a Dieulafoy lesion situated at the dome of the diverticulum. It is noteworthy, however, that on the other side of the coin, improved visibility and access to the lesion comes at the expense of limited device maneuverability when employing the use of hemoclips. In addition, the hemoclip sheath may kink while traversing over the elevator of the duodenoscope, leading to failure of deployment.

In 2018, Jose Luiz Aranez et al. reported a case of a Dieulafoy lesion located at the rim of a periampullary diverticulum that was successfully managed with a novel duodenoscope-friendly endoscopic clip device (Dura Clip Repositional Haemostasis Clip; CONMED Corporation, Utica, NY).<sup>[2]</sup> This device which, unfortunately, was not at our disposal is specifically designed for more effective use with a duodenoscope owing to its unique rubber coated sheath and a flexible spring tube at the distal end for an improved performance over the elevator.

We opted for the hemoclip device as opposed to diathermy in our attempt to secure the bleeding lesion due to the associated

risk of perforation of the thin walled diverticulum with the latter modality. A preemptive sub mucosal bleb was created with an epinephrine injection to enhance ease of clip deployment and to produce a cushion that will reduce the risk of inadvertently clipping the CBD.<sup>[6]</sup> The conventional technique for hemoclip deployment is to position the device at a tangential approach to the lesion to allow for adequate capture of mucosal tissue on either side of the prong. However we approached the lesion at a 45° angle to minimise the risk of CBD injury. The successful haemostasis achieved through this approach obviated the need for angiographic embolization or surgical intervention.

### Conclusion

We illustrate an approach of achieving successful hemostasis of a bleeding Dieulafoy lesion within a periampullary diverticulum using a combination of epinephrine injection and hemoclip deployment through the working channel of a duodenoscope. Patient was discharged well with no recurrence of bleeding. <https://drive.google.com/file/d/1qbPAA0R-UtghENyyJFoihtg8cDg0P80/view>

### Conflict of Interests

Authors declare no Conflict of Interests for this article.

### Patient Consent

The patient had given verbal consent for publication of details of the case.

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