



CASE REPORT

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Massively bleeding Dieulafoy lesion and unique rescue: a video based case report from National Liver Institute, Menoufia University

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Abstract

Background: Dieulafoy arteriole is a lamina propria vessel that unlike the other arterioles is getting bigger and bending into the mucosa of the gastrointestinal tract. Such anatomic aberration is unusual cause for life threatening gastrointestinal bleeds.

Case presentation: Herein, we report a case of an elderly gentleman, who had massively bleeding Dieulafoy lesion and endoscopic hemostasis of the spurting Dieulafoy by the use of the over-the-scope clip (OVESCO, Tübingen, Germany) has been successfully undertaken.

Conclusion: The endoscopic management of Dieulafoy related bleeds can be enriched by the use of over-the-scope clip, OVESCO, technique.

Keywords: Dieulafoy lesion, OVESCO clip, bleeding, management

Background

A Dieulafoy lesion is a dilated tortuous arteriole abnormally protruding into the mucosa of the gastrointestinal tract [1]. Dieulafoy arteriole is a very infrequent lesion mostly appearing in the lesser curvature of the stomach [1]. Many reports described Dieulafoy lesions in other parts of the gastrointestinal tract [2–7].

Professor Georges Dieulafoy had described the lesion in a small series in 1894 & believed it is a precursor of an ulcer [8]. Before Dieulafoy, in 1849, Dr. Gallard published three cases of Dieulafoy associated gastric ulcerations & fatal massive bleeding [9]. However, Dieulafoy had more comprehensive narrative of the condition.

Dieulafoy arteriole can either rupture or erode into the mucosa portraying up to 5% of acute upper gastrointestinal bleeds [10]. Bleeding from Dieulafoy is typically massive, and along endoscopic recognition of the oozing

erosion can be quite difficult [1]. Water-jet irrigation technique particularly along the lesser curvature has been described to permit recognition of the spurting arteriole or to remove the tiny fibrin clot over the Dieulafoy lesion, hence, provoking bleeding and visualization of the lesion [11].

Most recently, the large subsurface Dieulafoy arteriole can be promptly identified by using the doppler quality of endoscopic ultrasound (EUS) [12]. However, Dieulafoy lesion should be implied in every case of obscure gastrointestinal hemorrhage [1].

Case presentation

Here, we are reporting a case of 70-year-old gentleman, who presented feebly to the emergency unit of the National Liver Institute, Menoufia University, complaining of successive vomiting of huge amounts of fresh blood. His relatives negated any previous similar condition. They reported poor control of his insulin dependent diabetes mellitus, which was diagnosed 10 years earlier.

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They gave history of myocardial infarction on mid-2014, with coronary care admission and placement of three coronary stents. Since that time, the patient is regularly on small dose salicylates and clopidogrel.

Imperative physical and hemodynamic assessment revealed a pale drowsy old man with a full-blown picture of shock: his blood pressure was 80/50 mmHg, pulse was 120 beat/min, and a respiratory rate of 24 breath/min. Anti-shock measures were promptly administered with blood grouping for preparing red blood cell packs.

Laboratory research revealed severe anemia, and leukocytosis. The critically deficient hemoglobin concentration (4mg/dl) had mandated urgent blood transfusion of five units of packed red blood cells. After six hours of unremitting resuscitation, and once being stabilized, the patient was referred to the endoscopy unit where an ulcer with visible vessels (Forrest 1B) 5cm below the cardia on the greater curvature was well-defined, accordingly, an argon plasma electro-cautery and hemo-clips were applied for proper hemostasis. Securely, the patient was referred to the ward with dedicated follow-up. Unluckily, two days later, he suffered a second profound attack of hematemesis and along with intravenous fluids, he was immediately transferred to the endoscopy unit. The endoscopist witnessed a healed status for the previously treated ulcer and surprisingly, a fundal Dieulafoy spurting lesion was evident. The spurter was injected by 5 ampoules cyanoacrylate and bleeding was efficiently stopped.

Again, two days later, the patient had his third attack of massive hematemesis. A third upper endoscopy revealed recurred bleeding from the previously injected Dieulafoy spurter. The decision was determined to use the Ovesco clipping technique as a last weapon for combatting the relapsed Dieulafoy bleeding. An experienced endoscopist successfully deployed the clip and bleeding was instantly stopped (video 1 and 2).

The patient remained stabilized, and a second look-endoscopic examination- has revealed proper healing (video 3).

Discussion

Professor Georges Dieulafoy had described Dieulafoy arteriole a century and half ago, yet, the pathogenesis and the mechanism of bleeding from this vascular anomaly had not been precisely appreciated [7]. Minor trauma to a point in the mucosa which is pressurized by the enlarged dilated arteriole has been postulated as the likely mechanism for a bleeding Dieulafoy arteriole [13].

Implication of endoscopy in the diagnosis and management of the bleeding Dieulafoy has reduced the need for surgical intervention, also, reduced high mortality perpetually ascribed for this condition [14].

The reported endoscopic definitions of Dieulafoy lesions are ranging from an arterial spurting, small pulsatile streaming from a minute (<3 mm) mucosal defects, a protruding vessel with or without active bleeding within a minute mucosal defect with normal surrounding mucosa to an adherent clot attached to a minute mucosal defect or a normally appearing mucosa [15].

Endoscopic techniques to obtain hemostasis in Dieulafoy bleeds have been progressing over time. From old to recent, pure injection therapy of adrenaline (1:10,000) or cyanoacrylate glue to combined injection therapy and either hemoclips, argon plasma electro-cautery or band ligation are all used as alternative endoscopic procedures in management of Dieulafoy bleeds [16, 17]. The reported success rate of these different endoscopic techniques is varying between 75 to 98% [1].

Pure injection endoscopic management, leukocytosis, reduced prothrombin concentration and the use of anti-platelet drugs have been mentioned in many studies as predictors for rebleeding of Dieulafoy lesion after first endoscopic hemostasis [18, 19].

The case in this report has received only cyanoacrylate injection as the primary endoscopic management, additionally he was under aspirin treatment for his cardiac insufficiency. Hence, he was prone for rebleeding after apparently primary endoscopic hemostasis.

Up till now, a consensus treatment for Dieulafoy bleeding is not available and different modalities are used depending on the patient's presentation and the endoscopic experience of the endoscopy personnel [20].

Ovesco clip (Tübingen, Germany), an over-the-scope clip is nitinol, biocompatible and mounted on an applicator cap. The Ovesco clip is endoscopically deployed into the bleeding Dieulafoy in a resembling manner to variceal band ligation [21]. The key to successful deployment is staying calm, lining up the lesion, suction and then deployment.

The few publications concerning the use of the over scope clipping technique in management of Dieulafoy bleeds have shown remarkable hemostatic achievements [21–23]. Hence, Ovesco clipping was chosen in purpose to obtain adequate hemostasis in this case after failure of the first cyanoacrylate and re-bleeding. Proper healing of the Dieulafoy lesion which was documented in the follow-up endoscopic examination has confirmed the effectiveness, of the Ovesco clipping technique in the management of such a critical case.

Conclusion

This is the first report from the National Liver Institute, Menoufia University, describing successful use of the Ovesco clip in obtaining hemostasis of a massively spurting Dieulafoy lesion. Ovesco clipping can be proposed as the first line treatment for Dieulafoy bleeds.

Abbreviations

OVESCO: Over the scope; EUS: Endoscopic ultrasound

Supplementary Information

The online version contains supplementary material available at <https://doi.org/10.1186/s43066-021-00137-0>.

Additional file 1: Video 1. The Dieulafoy spurter.

Additional file 2: Video 2. The deployment of OVESCO clip.

Additional file 3: Video 3. The properly healed Dieulafoy lesion.

Acknowledgements

All authors are indebted to Professor/ Omkolsoum Alhaddad for her great efforts in fulfilling this work

Authors' contributions

EO analyzed and interpreted the patient data and was a major contributor in writing the manuscript. EM helped in writing and revising the manuscript. EA was responsible on the clinical follow-up of the case. EA performed the endoscopic interventions. All authors read and approved the final manuscript.

Funding

No funding resources.

Availability of data and materials

All the data is available in the manuscript

Declarations**Ethics approval and consent to participate**

The case was written after the consent of the ethical committee of National Liver Institute Menoufia University

Consent for publication

Written informed consent was obtained from the patient for publication of this case report and accompanying images".

Competing interests

All authors declare that they had no conflict of interest.

Received: 17 February 2021 Accepted: 27 July 2021

Published online: 12 September 2021

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