



Successful hemostasis of an actively bleeding Dieulafoy's lesion using only argon plasma coagulation in a patient with myelodysplastic syndrome and severe thrombocytopenia

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Dear Editor,

Nonvariceal upper gastrointestinal hemorrhage may lead to severe fatal consequences, especially in patients with massive bleeding and unimprovable hemostatic condition that predisposes to a spontaneous bleeding that cannot be corrected immediately before the endoscopic procedure. With increase in hematological malignancies and frequency of intensive chemotherapy regimens that suppress the bone marrow, the incidence of severe thrombocytopenia has increased, according to most of the comprehensive meta-analyses (1). There are plenty of algorithms and recommendations for patients using anticoagulants and/or antiplatelet agents, in the guideline of European Society of Gastrointestinal Endoscopy and other similar guidelines. However, there is no clear pearl or high-quality evidence for patients, especially those with hematological malignancies leading to poor hemostasis condition and severe thrombocytopenia (2,3). For this particular situation, there is only one suggestion available in the guidelines, which is to increase the number of platelets to $>50 \times 10^9/L$, but this is often not possible for almost all patients (3). Furthermore, in the guidelines, there is also no suggestion about which endoscopic procedure is suitable and safe for this particular patient group.

A 72-year-old man with myelodysplastic syndrome presented with a massive upper gastrointestinal hemorrhage in a shock state after the introduction of intensive chemotherapy regimen. The platelet count was only $7 \times 10^9/L$ as the most striking laboratory finding. Initially, aggressive fluid resuscitation with blood and platelet replacement therapies were initiated, but the platelet count could not be increased above this level due to ongoing bleeding. Upper endoscopy showed that there were multiple large ecchymoses and petechiae in the esophagus, suggesting a highly spontaneous bleeding condition (Figure 1a) and an actively bleeding Dieulafoy's lesion located at a part of the proximal stomach (Figure 1b). At the retroflexion position, this

lesion was successfully coagulated only with 60 watts of argon plasma coagulation (Erbe; Northwest Parkway Marietta, Georgia, USA) at 2 L/min within 2 min. The bleeding was stopped, and the patient was discharged after 5 days of the procedure without further incidence.

The upper gastrointestinal hemorrhages may be fatal if patients have advanced age, co-morbid diseases, and hemodynamic instability. The association of hematological malignancies with severe thrombocytopenia is a specific situation leading to a spontaneous bleeding and making this bleeding even more life-threatening situation by exacerbating. The bleeding of Dieulafoy's lesion is also a very special condition regarding location that commonly seen within the 6 cm above and below of the gastroesophageal junction. The severe thrombocytopenia, whether due to hematological malignancy or chemotherapy, is a specific situation which can lead to a spontaneous bleeding or make this actual bleeding even more life-threatening event by exacerbating. The Dieulafoy's lesion bleeding is also a very special condition which is commonly seen within the 6 cm above and below of the gastroesophageal junction, so endoscopic intervention can be difficult. When an upper gastrointestinal hemorrhage with hemodynamic instability is encountered, a rapid intravascular volume replacement should first be performed with volume expanders. For an actively bleeding Dieulafoy's lesion, combined endoscopic procedures such as sclerotherapy, clips, and banding are commonly used to achieve initial hemostasis. However, in this case, we did not prefer these methods because it was hard to approach and endoscopically perform these methods to the lesion. Further, there was no recommendation in the guidelines about which specific endoscopic hemostasis modality should be preferred in case of severe thrombocytopenic conditions; for this, we did not want to cause further bleeding with these contact methods (2). We preferred to use argon plasma coagulation, a non-contact thermal method of hemostasis, because it was easy to reach with the side-end catheter for this Dieulafoy's

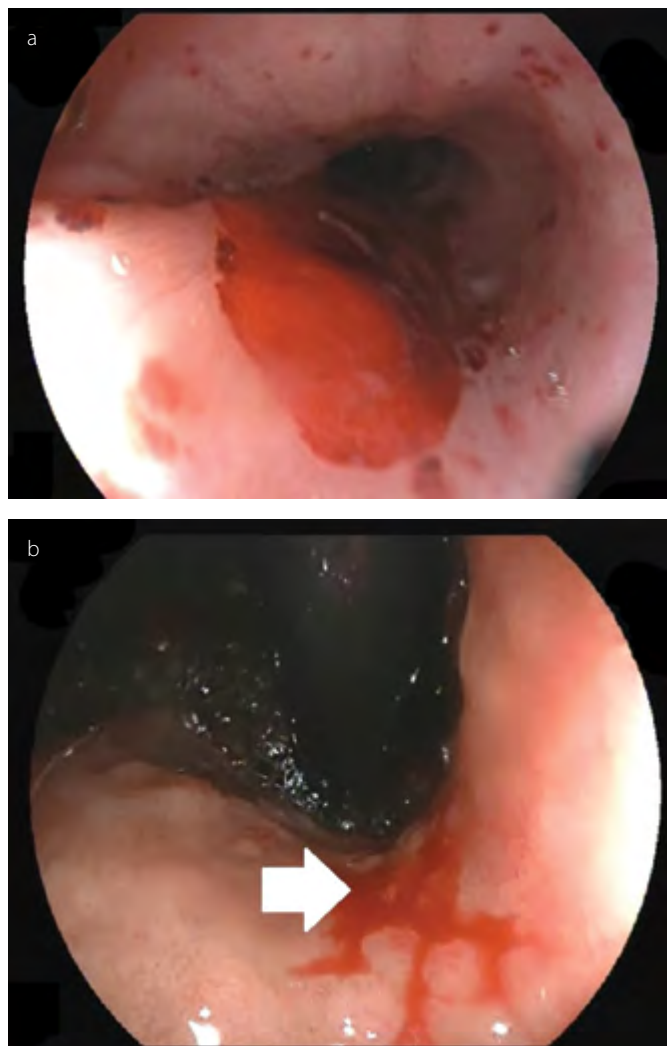


Figure 1. a. b. (a) Multiple large ecchymoses and petechiae in the middle and lower part of the esophagus suggesting a highly spontaneous bleeding condition, (b) At the retroflexion position, an actively bleeding Dieulafoy's lesion was seen clearly (white arrow); the bleeding stopped with argon plasma coagulation

lesion. We preferred to argon plasma coagulation for initial hemostasis especially because of its non-contact thermal feature which does not cause additional contact bleeding. It also had some theoretical advantages such as its ease of application, safety due to reduced depth of penetration, and no contact-related bleeding. Transcatheter angiographic embolization and surgery may also be other relevant options if all endoscopic approaches are unsuccessful.

In case of massive bleeding with severe thrombocytopenia induced by any reasons, the argon plasma coagulation may first be considered as it is efficient and safe and does not lead to further contact bleeding. With the help of our case and other related cases, specific awareness may be created for patients with poor hemostatic condition and severe thrombocytopenia.

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