Laparoscopic Single-Port Transgastric Underrunning of a Dieulafoy Lesion

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Abstract

Introduction: A Dieulafoy lesion is a large tortuous submucosal arteriole protruding through a small mucosal defect.¹ It is uncommon but potentially life threatening.² Endoscopic hemostasis can control bleeding in 90% of patients. Angiography is an alternative for inaccessible lesions, but surgery is required should these options fail.³ Single-port laparoscopic surgery has gained traction recently because of potentially faster recovery and better cosmesis versus multiport laparoscopic surgery.^{4,5} The use of a “glove-port” has also been described since 2009 as an adjunct to single-port surgery.^{6–9} This video describes a minimally invasive surgical technique for securing hemostasis of a Dieulafoy lesion.

Methods: A 56-year-old man with polycythemia vera on hydroxyurea and clopidogrel, hypertension, gout, and previous endoscopic clipping of a bleeding fundal Dieulafoy lesion 10 years ago, was admitted for sudden onset hematemesis and anemia (hemoglobin 8 g/dL). The rest of his laboratory studies were unremarkable. Emergency endoscopy revealed a Dieulafoy lesion in the gastric fundus with a pulsating visible vessel and active bleeding. It was initially treated with therapeutic endoscopy using multiple modalities, including clips, adrenaline injection, and hemospray. Owing to rebleeding, the patient subsequently underwent left gastric and gastroepiploic artery embolization. The

hemoglobin rose slowly from 8 to 12 g/dL. However, 8 days later, he developed recurrent hematemesis with a corresponding hemoglobin drop. A computed tomography angiogram revealed contrast extravasation at the stomach fundus. Repeat endoscopy failed to achieve hemostasis. An emergency laparoscopic single-port transgastric underrunning of the Dieulafoy lesion was performed. Under general anesthesia, a 5 cm left subcostal incision was made. The stomach was extracted and an anterior wall gastrotomy was made. Stay sutures were placed and an Alexis wound protector was inserted from the skin wound to the gastric lumen. A surgical glove with three access ports (one 10 mm and two 5 mm) was wrapped around the wound protector. Intragastric pneumatic pressure was established. A 30° laparoscope was inserted through the 10 mm port and laparoscopic instruments through the 5 mm ports. The bleeding Dieulafoy lesion was underrun with multiple V-loc stitches. After confirming hemostasis, the wound protector was removed, and the gastrotomy was closed along with the fascia and skin.

Results: The patient's recovery was uneventful with no recurrent gastrointestinal bleeds. The patient was discharged on postoperative day two and remained asymptomatic during 6 months of outpatient follow-up. There was no indication for a repeat endoscopy.

Conclusion: Laparoscopic single-port transgastric underrunning of a Dieulafoy lesion is a feasible low-cost minimally invasive technique for the treatment of selected cases of refractory upper gastrointestinal bleeding. Although this single-port technique has been described for other indications, including wedge resection of gastrointestinal stromal tumors,¹⁰ cholecystectomies, appendectomies, and hemicolectomies, to our knowledge, this is the first description of such a technique for securing hemostasis of a Dieulafoy lesion.

No competing financial interests exist.

Runtime of video: 6 mins

Keywords: Dieulafoy lesion, laparoscopic surgery, upper gastrointestinal bleeding, transgastric surgery

Cite this video

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