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CASE REPORT

골수형성 이상증후군 환자에서 조기위암에 대한 내시경 점막하 박리술

임은주, 심은희, 김병욱, 김종인, 김준성, 지정선, 최 황
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Endoscopic Submucosal Dissection for Early Gastric Cancer in a Patient with Myelodysplastic Syndrome

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Endoscopic submucosal dissection (ESD) has been successfully performed in thrombocytopenic conditions such as in patients with liver cirrhosis but successful ESD for early gastric cancer (EGC) in hematologic diseases has rarely been reported. A 52-year-old male patient, who had previously been diagnosed with myelodysplastic syndrome 2 years ago, was admitted to our hospital for ESD of EGC. ESD was performed successfully in this patient after platelet concentrates transfusion on the day of ESD. ESD might be an option for the treatment of EGC in thrombocytopenia due to hematologic diseases when optimal supportive managements are applied. **(Korean J Gastroenterol 2015;65:173-176)**

Key Words: Stomach neoplasms; Myelodysplastic syndromes; Endoscopy

INTRODUCTION

Endoscopic submucosal dissection (ESD) is now accepted as an alternative to surgery for the treatment of early gastric cancer (EGC). Because the incidence of complications, such as bleeding or perforation, are high, the utility of this treatment modality can be limited in patients with a high probability of bleeding. Although ESD has been successfully performed in thrombocytopenic conditions such as in patients with liver cirrhosis[1] successful ESD for EGC in hematologic diseases has rarely been reported. In this case, we report a patient who, after being diagnosed with myelodysplastic syndrome (MDS) and accompanying EGC, was successfully treated with ESD.

CASE REPORT

A 52-year-old male patient, who had previously been diagnosed with MDS 2 years ago, was admitted to our hospital for ESD of EGC. As for MDS, he was in the low risk group according to the International Prognostic Scoring System[2] and was under conservative management with regular follow up. On initial gastroscopy, an EGC lesion was noted at the posterior wall of the gastric antrum (Fig. 1A). A well-differentiated ad-

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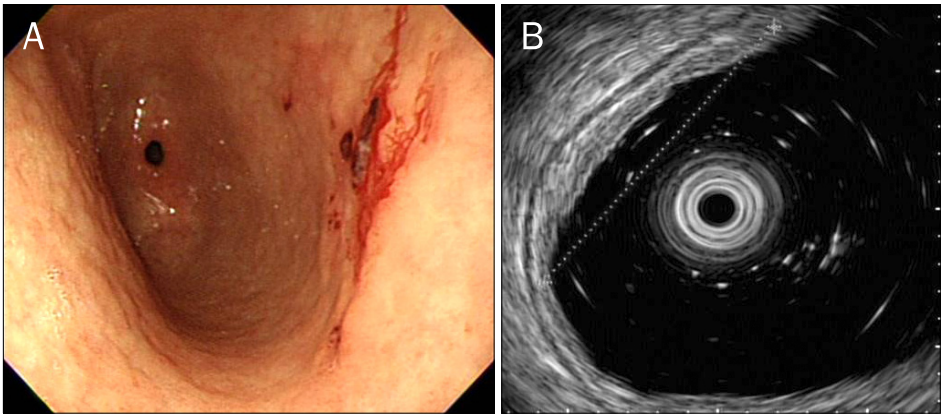

Fig. 1. (A) Initial gastroscopy. An irregularly elevated lesion, which bled easily when touched, is noted at the posterior wall of the antrum. (B) Endoscopic ultrasound. The lesion measured 3.0 cm at the long axis and is limited to the mucosal layer.

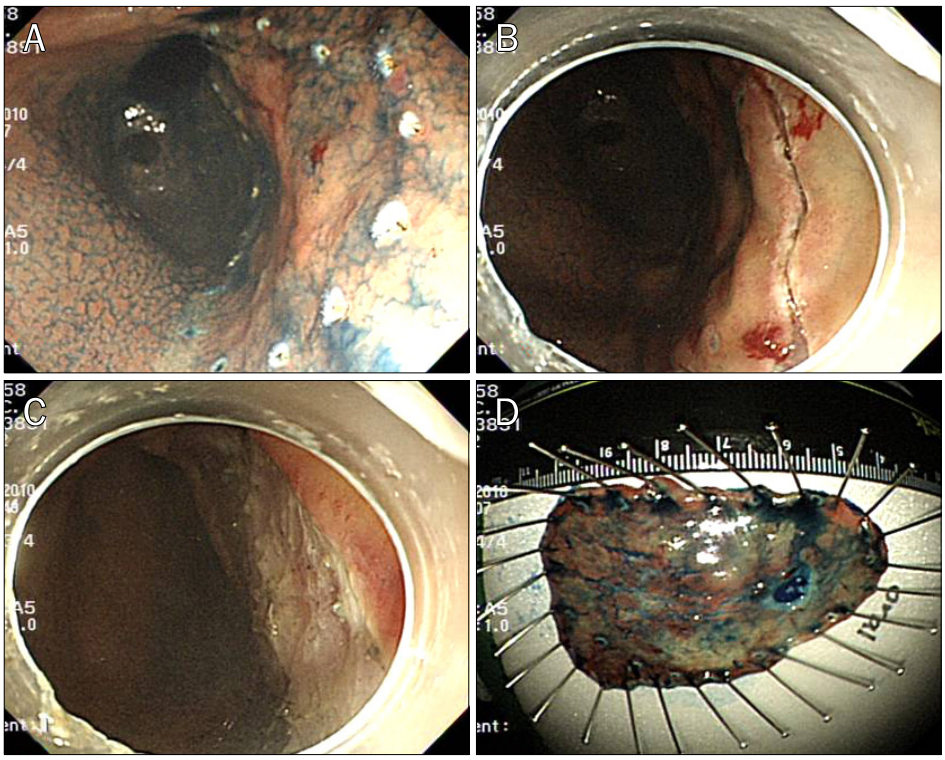

Fig. 2. Endoscopic submucosal dissection procedures. (A) The lesion is marked with an argon plasma laser after the spraying of indigo carmine. (B) The precut is completed with a hook knife. (C) The lesion is completely dissected *en bloc*. (D) The dissected lesion measured 6.0×4.5 cm.

enocarcinoma was confirmed histopathologically. The patient underwent endoscopic ultrasound, which revealed a 1.5×3.0 cm-sized isoechoic mass in the mucosal layer (Fig. 1B). No extragastric metastatic lesions were found by abdominal computed tomography. The patient's laboratory data showed a hemoglobin level of 8.6 g/dL and a platelet count of 21,000/mm^3. Other laboratory values were within normal limits.

Three hours before ESD, six units of platelet concentrates were transfused, and the procedure was performed successfully without any complications (Fig. 2). The entire procedure took 44 minutes. On the next day, laboratory data showed a hemoglobin level of 7.5 g/dL and a platelet count of 77,000/mm^3. An additional six units of platelet concentrates were administered to the patient. The resected lesion measured 6.0×4.5 cm. A well-differentiated adenocarcinoma limited to the mucosa was confirmed histopathologically. Intravenous pantoprazole 80 mg was administered before the procedure and then 8 mg/hour for 3 days. Oral feeding was started on the third day of the procedure along with oral pantoprazole 40 mg per day for six weeks. The post-ESD course was uneventful and the patient was discharged on the fifth day.

A follow-up gastroscopy, which was performed eight weeks after ESD, showed complete healing of the lesion (Fig. 3).

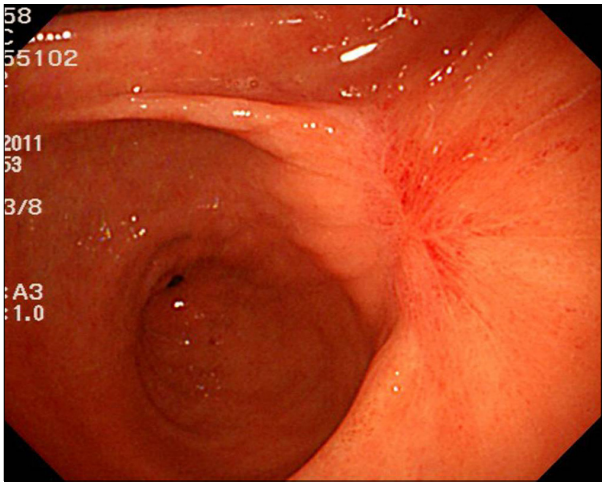

Fig. 3. Follow-up gastroscopy eight weeks after endoscopic submucosal dissection. A red ulcer scar is noted at the site of the dissection.

After seven months, laboratory data showed a hemoglobin level of 10.3 g/dL and a platelet count of 22,000/mm^3. The patient is in good condition without evidence of disease recurrence over 4 years.

DISCUSSION

Bleeding and perforation are common complications of ESD: bleeding is observed in 15.6% of patients, and perforation is observed in 1.2%.[3] Despite the high rate of bleeding, this procedure has been performed successfully in patients with bleeding diatheses, such as liver cirrhosis or chronic renal failure.[4,5] However, there have been no reports on successful ESD for EGC in patients with thrombocytopenia due to hematologic diseases.

MDS comprise a group of biologically and clinically heterogeneous clonal hematopoietic neoplasms characterized by aberrant myeloid differentiation, dysplastic changes, ineffective hematopoiesis and increasing genomic instability that manifest clinically into peripheral blood cytopenias and variably increased rates of leukemic progression. In the low risk groups, life expectancy is considerable and malignancies of other organs should be treated properly.[6]

In patients with hematologic diseases, severe thrombocytopenia frequently develops as a consequence of the disease or its treatment. In most cases, platelet concentrates are administered as prophylaxis, to increase low platelet counts and reduce the risk of bleeding. However, the degree to which prophylactic platelet transfusions benefit patients with severe thrombocytopenia has been unclear. A recent trial suggested that a policy of giving platelet concentrates only as treatment for bleeding might become a new standard of care in selected patients, although the primary end point was a reduction in the number of platelet transfusions, not clinical outcome such as bleeding.[7]

In general platelet counts of 50,000/mm^3 are considered sufficient for surgery in most cases.[8] However, guidelines of optimal platelet counts for endoscopic resection have not been suggested. One systematic review on ESD of gastric neoplasms in liver cirrhosis patients reported that complication rates were not different when platelet counts were over 50,000/mm^3.[9] Considering these reports, we think that platelet counts of 50,000/mm^3 might be considered sufficient for endoscopic resection for gastric neoplasms.

To prevent ESD-related bleeding, pharmacological treatment with proton pump inhibitors (PPIs) as well as endoscopic hemostasis should be considered. Re-bleeding up to 72 hours after endoscopic treatment is often caused by the dissolution of formed fibrin clots by gastric acid. Because platelet aggregation, coagulation, and fibrinolysis on gastric hemorrhagic ulcers strongly depend on intragastric pH levels, ways to neutralize pH levels should be considered. Studies concerning post-ESD ulcer healing and post-operation hemorrhage have reported that PPI therapy gives good healing rates for post-ESD ulcers, and it is also effective for the prevention of post-operative hemorrhage.[10,11]

In this case, the patient was diagnosed with MDS, and the patient's platelet count was 21,000/mm^3 on the day of the ESD, but the transfusion of platelet concentrates enabled us to perform the procedure without bleeding. PPI administration also might have contributed to the prevention of post-ESD bleeding.

In conclusion, ESD can be performed successfully in patients with thromobcytopenias due to hematologic diseases such as MDS, when platelet concentrates and PPIs are administered properly.

REFERENCES

1. Ogura K, Okamoto M, Sugimoto T, et al. Efficacy and safety of endoscopic submucosal dissection for gastric cancer in patients with liver cirrhosis. Endoscopy 2008;40:443-445.
2. Greenberg P, Cox C, LeBeau MM, et al. International scoring sys-

tem for evaluating prognosis in myelodysplastic syndromes. Blood 1997;89:2079-2088.
3. Chung IK, Lee JH, Lee SH, et al. Therapeutic outcomes in 1000 cases of endoscopic submucosal dissection for early gastric neoplasms: Korean ESD Study Group multicenter study. Gastrointest Endosc 2009;69:1228-1235.
4. Kwon YL, Kim ES, Lee KI, et al. Endoscopic treatments of gastric mucosal lesions are not riskier in patients with chronic renal failure or liver cirrhosis. Surg Endosc 2011;25:1994-1999.
5. Villias C, Gourgiotis S, Veloudis G, Sampaziotis D, Moreas H. Synchronous early gastric cancer and gastrointestinal stromal tumor in the stomach of a patient with idiopathic thrombocytopenic purpura. J Dig Dis 2008;9:104-107.
6. Fenaux P, Adès L. How we treat lower-risk myelodysplastic syndromes. Blood 2013;121:4280-4286.
7. Stanworth SJ, Estcourt LJ, Powter G, et al; TOPPS Investigators. A no-prophylaxis platelet-transfusion strategy for hematologic cancers. N Engl J Med 2013;368:1771-1780.
8. Rebulla P. Platelet transfusion trigger in difficult patients. Transfus Clin Biol 2001;8:249-254.
9. Repici A, Pagano N, Hassan C, et al. Endoscopic submucosal dissection of gastric neoplastic lesions in patients with liver cirrhosis: a systematic review. J Gastrointestin Liver Dis 2012;21:303-307.
10. Uedo N, Takeuchi Y, Yamada T, et al. Effect of a proton pump inhibitor or an H2-receptor antagonist on prevention of bleeding from ulcer after endoscopic submucosal dissection of early gastric cancer: a prospective randomized controlled trial. Am J Gastroenterol 2007;102:1610-1616.
11. Yang Z, Wu Q, Liu Z, Wu K, Fan D. Proton pump inhibitors versus histamine-2-receptor antagonists for the management of iatrogenic gastric ulcer after endoscopic mucosal resection or endoscopic submucosal dissection: a meta-analysis of randomized trials. Digestion 2011;84:315-320.