CASE REPORT

Infected Aneurysm after Endoscopic Submucosal Dissection

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Abstract

A 79-year-old man on hemodialysis was hospitalized for further investigation. Early gastric cancer was diagnosed by gastrointestinal endoscopy and endoscopic submucosal dissection (ESD) was performed. Fever and abdominal pain thereafter developed, and a severe inflammatory response was observed on a blood test. Contrast computed tomography (CT) showed ulcer-like projections and soft tissue surrounding the aorta, from the celiac to left renal artery. An infected aneurysm was diagnosed. Although infected aneurysms developing after laparoscopic cholecystectomy or biopsy of contiguous esophageal duplication cyst have been reported, those developing after ESD have not. When fever and abdominal pain develop after ESD, an infected aneurysm should be considered and contrast CT performed.

Key words: endoscopic submucosal dissection, infected aneurysm, hemodialysis

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Introduction

Endoscopic submucosal dissection (ESD) is a common treatment for early gastric cancer. However, a certain degree of risk of developing other incidental diseases has been reported (1). Incidental diseases reported after ESD typically include bleeding and perforation, but the development of an infected aneurysm after ESD has not yet been reported (2). We herein report for the first time, a case in which a patient developed an infected aneurysm after ESD.

Case Report

A 79-year-old man on hemodialysis for chronic renal failure due to nephrosclerosis was hospitalized for the further investigation of anemia. His condition was not complicated with diabetes and he had not been treated with either oral antiplatelet or anticoagulant drugs. Upper gastrointestinal endoscopy revealed early gastric cancer (IIa + IIc) from the gastric cardia to the posterior gastric body wall, and the patient subsequently underwent ESD as a countermeasure (Fig. 1). On Day 1 following ESD, the patient’s body temperature rose to 38.2°C, and ceftriaxone administration was initiated to prevent infection. The patient vomited blood on Day 2, and upper gastrointestinal endoscopy was performed once again performed. Bleeding was observed at the upper part of the anterior gastric body wall and treated with an endoscopic clipping technique. Abdominal contrast tomography (CT) on the same day revealed no perforation or aneurysms.

The patient’s overall status was stable, but epigastric pain occurred on Day 7 after surgery. His body temperature was still high on Day 9 (37.7°C), and a blood test indicated a white blood cell (WBC) count of 10,390/μL and C-reactive protein (CRP) level of 13.03 mg/dL. Abdominal contrast CT showed an ulcer-like projection and soft tissue surrounding the aorta, from the celiac artery to the left renal artery, and the patient was diagnosed with an infected aneurysm (Fig. 2). While a blood culture was negative, the antimicrobial agent was changed from ceftriaxone to meropenem. The patient’s fever and epigastric pain were ameliorated, and the blood test findings showed a WBC count of 6,300/μL and CRP level of 0.25 mg/dL. The patient was discharged on Day 33 after ESD, and abdominal contrast CT performed three months later showed no increase in the aneurysm size.

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Discussion

In the present case, we discovered that an infected aneurysm could occur after ESD and that contrast CT is useful for diagnosing incidental diseases occurring after ESD.

Infected aneurysms are classified as mycotic aneurysm, bacterial arteritis with aneurysm, infection of an existing aneurysm or post-traumatic infectious pseudoaneurysm, and they are believed to occur due to bacteremia from infective endocarditis, bacterial embolism from other infected areas, or following surgery and catheterization (3). Several previous reports have cited the spread of infection to surrounding blood vessels after laparoscopic cholecystectomy or biopsy of contiguous esophageal duplication cyst, resulting in the development of an infected aneurysm (4, 5), while another report has shown that phlegmonous gastritis occurred after ESD (6). Phlegmonous gastritis was also observed in the present case, and it might have resulted in the spread of inflammation in the surrounding tissue and development of the infected aneurysm. The likelihood that the infected aneurysm in the present case occurred due to bloodstream infection is relatively low, given the lack of findings suggesting a bloodstream infection (such as at the site of vascular access), the negative blood culture after antimicrobial administration and the relatively low risk of postoperative bacteremia after gastric ESD (7). The fact that this patient was on hemodialysis, was a compromised host and had advanced arteriosclerosis may have facilitated the development of the infected aneurysm.

Contrast CT was useful in the present case for diagnosing an incidental disease after ESD. Post-ESD incidental diseases typically include bleeding, perforation and postoperative stenosis, and a CT scan is often performed to differentiate perforation when abdominal pain develops following ESD. However, a CT scan is also useful in diagnosing an

Figure 1. ESD was conducted to combat early gastric cancer spread over the lesser curvature of the gastric body immediately beneath the gastric cardia. No perforation was observed, but an exposed blood vessel was noted in the ulcer lesion after resection.

Figure 2. With abdominal contrast CT and 3D-CT, an ulcer-like projection and soft tissue surrounding the aorta were observed from the celiac artery to the left renal artery, and the patient was diagnosed with an infected aneurysm (arrows).
infected aneurysm, which is characterized by the observation of a cystic or multilocular cyst, cyst without calcification, soft tissue surrounding the aorta or the presence of periaortic gas (8). In the present case, the patient was suspected of having a perforation. Abdominal contrast CT was thus performed, and the infected aneurysm was diagnosed.

ESD is commonly used to treat early gastric cancer, but it may be followed by the development of incidental diseases. While the most common incidental diseases after ESD include bleeding and perforation, an infected aortic aneurysm may also occur. Therefore, when fever and abdominal pain develop after ESD, physicians should consider that an infected aneurysm might have developed and perform contrast CT to make a timely diagnosis.

The authors state that they have no Conflict of Interest (COI).

References


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