Intra-abdominal reactive lymphadenopathy developing 5 years after endoscopic submucosal dissection for early gastric cancer

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A 73-year-old man presented with an enlarged intraperitoneal lymph node. In 2003, endoscopic submucosal dissection had been performed for an early gastric cancer that complied with current guidelines for endoscopic treatment. The lesion was completely resected en bloc, curative endoscopic submucosal dissection. The patient was followed up on an outpatient basis, with no evidence of metastasis or recurrence. In November 2008, abdominal ultrasonography during a medical check-up showed an enlarged lymph node, about 20 mm in diameter. Computed tomography and positron emission tomography showed no contrast effects or abnormal accumulations of tracer in the affected region, but malignancy could not be ruled out. In August 2009, laparoscopic intra-abdominal lymphadenectomy was performed. Histopathological examination revealed no atypical cells, and reactive lymphadenopathy was diagnosed. The patient was followed up on an outpatient basis and currently remains well, with no recurrence.

Key words: lymphadenopathy, early gastric cancer, laparoscopic lymphadenectomy

Introduction

Intra-abdominal lymphadenopathy can be caused by various factors, irrespective of malignant or nonmalignant disease. However, it is often difficult to determine whether abdominal lymphadenopathy is associated with benign or malignant disease solely on the basis of imaging studies. Differential diagnosis is particularly challenging in the presence of a solitary enlarged lymph node in patients with no clear-cut evidence of a primary lesion.

Endoscopic mucosal resection (EMR) of early gastric cancer (EGC) with no risk of lymph node metastasis has been a standard technique in Japan. Empirical indications for EMR have been: 1. papillary or tubular (differentiated) adenocarcinoma, 2. a lesion less than 2 cm in diameter, 3. no ulceration within the tumor, and 4. no lymphatic or vessel involvement. In 2006, endoscopic submucosal dissection (ESD) was approved by the National Health Insurance system in Japan for the treatment of early gastric cancer EGC. Recently, attempts have been made to expand the indication range of ESD to include ulcerative or larger lesions, which are difficult to resect by conventional EMR.

This was a rare case of intra-abdominal reactive lymphadenopathy associated with a lymph node about 20 mm in diameter that developed 5 years after curative ESD for EGC.

Case Report

The patient was a 73-year-old man who presented with an enlarged intra-abdominal lymph node. In February 2003, a poorly demarcated, superficial and slightly depressed type (0-IIc) lesion was found in the greater curvature of the lower gastric body, and ESD was performed (Figure 1A). Histopathological examination revealed a superficial and slightly depressed type (0-IIc), well-differentiated tubular (tub1), intramucosal carcinoma, measuring 15 × 14 mm, with no ulcer or vascular invasion. The lateral and deep margins were tumor negative (Figure 2A-D). The lesion complied with current guidelines for endoscopic therapy and was completely resected en bloc. Subsequently, the patient...
Figure 1. Upper gastrointestinal endoscopy

A. Before ESD
Superficial and slightly depressed type (0-IIc) lesion was found in the greater curvature of the lower gastric body (as arrow).

B. 5 years after ESD
No distinct evidence of local recurrence or asynchronous multiple lesions

Figure 2

A. Specimen of ESD (mapping)
Yellow lines indicate lesions.

B. Specimen of ESD (macroscopic view)

C. Histopathological findings (×40), white line showing a superficial and slightly depressed type (0-IIc), well-differentiated tubular (tub1), intramucosal carcinoma, measuring 15 × 14 mm, with no ulcer or vascular invasion, lateral and deep margins negative.

D. Histopathological findings (×200), white line showing a superficial and slightly depressed type (0-IIc), well-differentiated tubular (tub1), intramucosal carcinoma, measuring 15 × 14 mm, with no ulcer or vascular invasion, lateral and deep margins negative.
Reactive lymphadenopathy after ESD

was followed up on an outpatient basis. To check for local recurrence around the scar formed at the site of endoscopic therapy, upper gastrointestinal endoscopy was performed 2, 6, and 12 months after treatment and at 12-month intervals thereafter. To confirm the presence or absence of distant metastasis, abdominal ultrasonography was performed at 12-month intervals. There was no evidence of metastasis or recurrence. However, in November 2008, abdominal ultrasonography during a medical check-up revealed an enlarged lymph node in the abdomen, and the patient was referred to our department. He had a history of hypertension and diabetes mellitus.

Physical examination showed no clinically significant findings. On laboratory tests, the fasting blood glucose was 281 mg/dL, the hemoglobin A1c level was 7.6%, and the urine glucose was +4. There were no clinically significant increases in the levels of interleukin-2 receptor or tumor markers in serum.

Upper gastrointestinal endoscopy performed 5 years after ESD showed no distinct evidence of local recurrence or asynchronous multiple lesions (Figure 1B). Abdominal ultrasonography revealed a hypoechoic, well-demarcated, oval mass, about 20 mm in diameter, on the lower surface of the liver. A computed tomographic (CT) scan of the abdomen showed an enlarged common hepatic artery lymph node (No. 8), about 20 mm in diameter (Figure 3). Subsequently, fluorodeoxyglucose-positron emission tomography (FDG-PET) showed no abnormal accumulation of tracer in the affected region.

The physical and imaging findings most strongly suggested reactive lymphadenopathy. However, the risks of nodal recurrence and malignant lymphoma could not

Figure 3. A contrast-enhanced computed tomographic scan of the abdomen. A common hepatic artery lymph node (No. 8) was enlarged (diameter, about 20 mm).

A. Specimen of the resected lymph node (macroscopic view) An enlarged common hepatic artery lymph node (No. 8) was noted (diameter, 20 × 14 mm).

B. Histopathological findings (×40), showing only lymphocyte aggregation, with no atypical cells.

C. Histopathological findings (×400), showing only lymphocyte aggregation, with no atypical cells.
be ruled out. We did not perform endoscopic ultrasound-guided fine needle aspiration (EUS-FNA) or CT-guided FNA in this patient because it was difficult to secure a puncture route. After receiving informed consent from the patient and his family, laparoscopic intra-abdominal lymphadenectomy was performed to obtain a definitive diagnosis in August 2009. Histopathological examination of the resected lymph node showed no distinctly atypical cells. Only lymphocyte aggregation was present (Figure 4A-C). Reactive lymphadenopathy was diagnosed on the basis of these findings. The patient is currently followed up on an outpatient basis.

Discussion
This patient had an enlarged intra-abdominal lymph node, about 20 mm in diameter, that developed 5 years after curative ESD for EGC. The incidence of lymph-node metastasis associated with intramucosal cancer is about 3%.2,5 However, Gotoda et al.2,4 reported that differentiated cancers unaccompanied by vascular invasion or an ulcer have a negligible risk of lymph-node metastasis if the lesion is intramucosal, irrespective of tumor size. The patient had a differentiated type, intramucosal cancer, 15 mm in diameter, with no ulcer or vascular invasion. Because the lesion complied with current guidelines and could be completely resected en bloc, we considered the risk of lymph-node metastasis after ESD to be negligible. In our patient, intra-abdominal lymphadenopathy was not associated with distinct accumulation of tracer on PET. We therefore considered observation with no further treatment, but the shortest diameter of the tumor was 20 mm, and the possibility of a malignant tumor could not be excluded.

Intra-abdominal lymphadenopathy can be broadly classified into malignant lymphadenopathy and reactive lymphadenopathy. Malignant lymphadenopathy is caused by metastasis from gastric cancer or other solid tumors or hematopoietic tumors, such as leukemia or malignant lymphoma. Reactive lymphadenopathy is caused by infection, such as bacteria or virus, tuberculosis, HIV (Human immunodeficiency virus) or inflammation, such as Crohn's disease or cholecystitis, pancreatitis, or drug allergy.6 In this patient, histopathological examination of lymph-node biopsy specimens showed no atypical cells, supporting the diagnosis of reactive lymphadenopathy. Although the underlying causes remain unclear, the patient's diabetes mellitus was poorly controlled, suggesting that increased susceptibility to infection had a role in the development of reactive lymphadenopathy.

A recent study has reported that EUS-FNA biopsy of abdominal lymph nodes can facilitate a definitive diagnosis.7 We did not perform EUS-FNA for this patient because it was difficult to secure a puncture route. Instead, we performed a laparoscopic lymphadenectomy to resect the enlarged lymph node. Because the presence of a metastatic tumor or malignant lymphoma would have required continued treatment, and both CT and PET suggested an isolated solid tumor 20 mm in diameter with no tumors at any other site, we decided to perform minimally invasive laparoscopic lymphadenectomy rather than open surgery.8-12

The present case was a rare case of intra-abdominal reactive lymphadenopathy associated with a lymph node about 20 mm in diameter that had developed 5 years after curative ESD for EGC. We believe that laparoscopic intra-abdominal lymphadenectomy are useful techniques for an intra-abdominal lymph-node biopsy and a definitive diagnosis.

References

