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CASE REPORT

A Rapidly Developing Diffuse Large B cell Lymphoma of the Stomach

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Introduction

Diffuse large B cell lymphoma (DLBCL) is a common histologic type among gastric malignant lymphomas and is generally considered a high-grade lymphoma because of its high MIB-1 level. We describe our experience of observing DLBCL with extremely high MIB-1 by endoscopy and review the relevant literature.

Case Report

The patient was a 79-year-old man with anorexia. His past history includes chronic hepatitis C after achieving a sustained virological response by interferon treatment 10 years ago, and hepatitis B virus infection in the past. Blood tests showed the level of LDH and soluble interleukin-2 receptor to be slightly increased to 272 U/L and 594 U/mL respectively, but there were no other abnormalities. No neoplastic lesion was observed in his first esophagogastroduodenoscopy (EGD) (Fig. 1). Two months later, the patient again visited due to anorexia and weight loss of 5 kg. B symptoms such as fever and nocturnal sweating were not observed. Abdominal CT showed significant wall thickening of the gastric corpus. EGD was performed again and an 8-cm mass lesion was observed in the greater curvature of the gastric corpus (Fig. 2). Biopsy showed proliferation of atypical CD20- and CD79a-positive cells (Fig. 3a), so the tumor was diagnosed as diffuse large B cell lymphoma (DLBCL). More than 90% of the cells were MIB-1 positive (Fig. 3b).

National Comprehensive Cancer Network-International Prognostic Index score, which is a prognostic indicator of malignant lymphoma, was 4 points, and the patient was classified into a high intermediate risk group. F-18 fluorodeoxyglucose positive emission tomography/computed tomography (PET-CT) revealed accumulation of fluorodeoxyglucose in the gastric corpus and lymph nodes around the abdominal aorta, and we diagnosed as Lugano classification stage II2. Six courses of R-THP-COP therapy using rituximab, pirarubicin, cyclophosphamide, vincristine, and prednisolone in combination and radiotherapy were performed.

The accumulation of fluorodeoxyglucose in the gastric corpus and the lymph nodes had disappeared 6 months after initial therapy. EGD showed that the site where the tumor had existed previously had become a white scar (Fig. 4), and there was no evidence of malignant lymphoma by biopsy. No recurrence was recognized during follow-up period of 2 years, and we evaluated the patient to have achieved complete remission.

Discussion

Primary gastrointestinal lymphoma accounts for 30–40% of all extranodal lymphomas [1], and the most frequent primary site is the stomach, ranging from 44 to 75% [2]. DLBCL is a common histopathologic type among gastric lymphomas [3]. It presents with various manifestations

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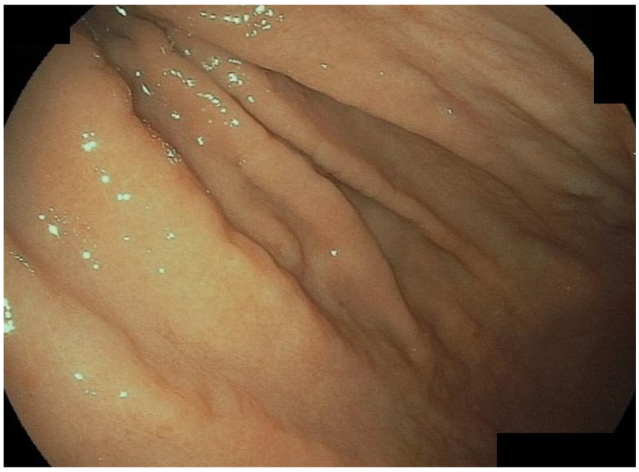

Fig. 1 The first esophagogastroduodenoscopy

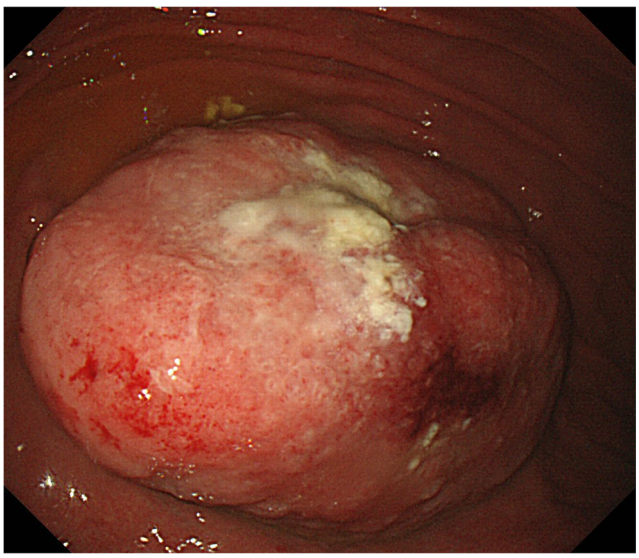

Fig. 2 The second esophagogastroduodenoscopy 2 months later

and may form a localized tumor similar to type 1 advanced gastric cancer.

MIB-1 is commonly used as a marker of cell proliferation that becomes positive except in resting cells, and it is known to correlate with malignancy and prognosis in various neoplastic diseases. A low level of MIB-1 has been reported to be a good prognostic factor in gastric lymphoma [4], while, DLBCL with a high MIB-1 level can rapidly develop and progress [5]. Because DLBCL usually has high rates of MIB-1 positivity of more than 40%, it is considered a high-grade lymphoma [6]. The gastric tumor had an extremely high MIB-1 positivity, thus we thought that the tumor developed and progressed rapidly.

The standard treatment for DLBCL is R-CHOP therapy alone or in combination with radiation therapy. For elderly patients with non-Hodgkin lymphoma, there were no differences in the rates of remission and survival between CHOP therapy and THP-COP therapy, and the validity of THP-COP therapy was shown [7]. Because our patient was elderly, R-THP-COP therapy was performed in consideration of cardiotoxicity.

The present patient had a high therapeutic effect and achieved complete remission. Chemotherapy is generally effective for tumors with rapid cell turnover. For example, breast cancer with a high MIB-1 level is especially responsive to chemotherapy and MIB-1 is used as a predictive factor for the treatment effect of breast cancer [8]. Therefore, high MIB-1 level may be related to the high therapeutic effect of this case.

Careful follow-up is necessary for the patients. We plan to conduct an endoscopic examination within a short period because early treatment intervention could contribute to the favorable prognosis.

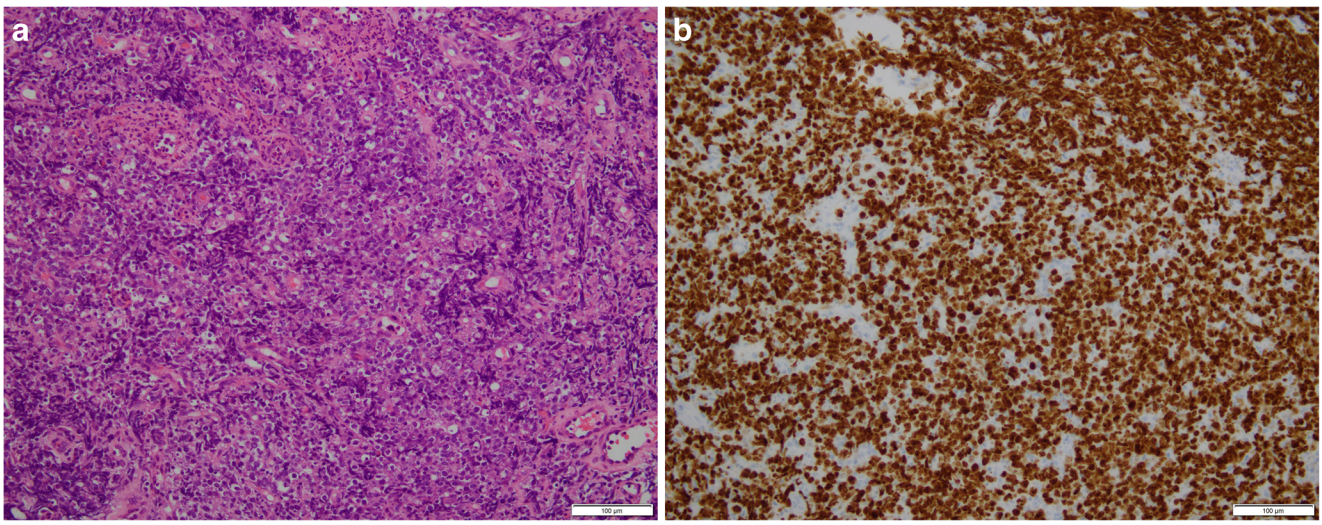

Fig. 3 **a**. Hematoxylin & eosin stain. **b** MIB-1 immunostaining

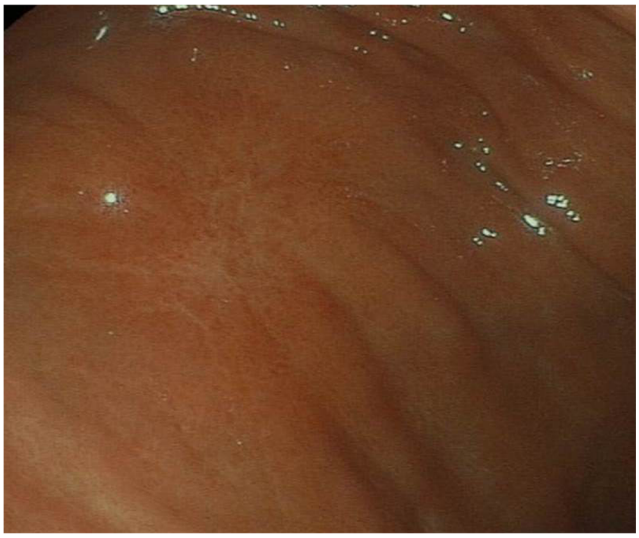

Fig. 4 Esophagogastroduodenoscopy after treatment

This is a valuable case in which DLBCL with extremely high MIB-1 formed a massive tumor in only 2 months. DLBCL with high MIB-1 could cause rapid development and progress, therefore prompt diagnosis and treatment intervention are required.

Compliance with Ethical Standards

Conflict of Interest The authors declare that they have no conflict of interest.

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