Regression of Follicular Lymphoma of the Duodenum Following Eradication of *H. pylori* Infection

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Abstract

A 64-year-old woman was referred for an examination of the upper gastrointestinal (GI) tract. Endoscopy showed an elevated lesion in the duodenum with central depression and multiple white granules. Biopsy specimens revealed lymphoid follicles composed predominantly of centrocytes with scattered centroblasts. The tumor cells were positive for bcl-2. The patient was diagnosed with follicular lymphoma and underwent antibiotic therapy for *Helicobacter pylori* (*H. pylori*) infection. The regression of the lesion was obvious. After 5.5 years of follow-up, there has been no evidence of recurrence. This case suggests that *H. pylori* eradication therapy is effective for treating follicular lymphoma in the duodenum.

Key words: follicular lymphoma, *Helicobacter pylori*

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Introduction

Follicular lymphoma (FL) of the duodenum is relatively rare (1). Many cases of primary FL of the duodenum are diagnosed in the early clinical stage and have a low histological grade (2). The clinical course of the disease is generally indolent (3). Therapies for patients with duodenal FL include a watchful wait-and-see strategy, radiotherapy, conventional chemotherapy, the administration of rituximab and surgical treatment.

It has been shown that the remission of low-grade gastric mucosa-associated lymphoid tissue (MALT) lymphoma can be achieved with the eradication of *H. pylori* alone (4).

The relationships between *H. pylori* infection, duodenal FL and the possible therapeutic efficacy of *H. pylori* eradication are controversial (5).

We herein report a case of FL that resolved following the eradication of *H. pylori*. The patient remains without residual disease after 5.5 years of careful endoscopic follow-up.

Case Report

A 64-year-old asymptomatic woman with no physical findings was referred for an examination of the upper gastrointestinal (GI) tract as part of a follow-up study of a duodenal ulcer. The laboratory data included a normal blood count and standard serum biochemical tests, and the serum levels of immunoglobulins and soluble interleukin-2 receptor were within the normal ranges. Endoscopy showed a large elevated lesion with a central depression in the second portion of the duodenum (Fig. 1A). The surface of the lesion was covered with white granules, and there were multiple white granules in the second portion of the duodenum (Fig. 1B). Endoscopic and histological examinations revealed atrophic gastritis. Colonoscopy, a barium-contrast study of the small bowel and positron emission tomography-computed tomography showed no abnormalities, except for cholelithiasis.

A histopathological examination of a simple pinch biopsy specimen revealed duodenal epithelium infiltrated by tightly packed lymphoid follicles that were predominantly composed of centrocytes with scattered centroblasts (Fig. 2A).
Immunohistochemical studies demonstrated that the tumor cells were positive for bcl-2 (Fig. 2B) and CD10. Therefore, a diagnosis of grade 1 FL was made (WHO classification of hematological malignancy) (6). A urea C13 breath test suggested the presence of H. pylori, at least in the upper GI tract.

The tumor was detected in the duodenum only and classified as stage I according to the International Workshop of the Lugano classification (7). Conventional chemotherapy, radiotherapy and surgery were offered; however, the patient refused these therapies and wished to receive follow-up. We therefore recommended H. pylori eradication treatment due to the duodenal ulcer, and the patient preferred to undergo a trial of this therapy with careful follow-up.

The H. pylori was eradicated using treatment with oral lansoprazole (30 mg twice daily), amoxicillin (750 mg twice daily) and clarithromycin (200 mg twice daily) for one week.

Five months after the completion of the eradication treatment, follow-up endoscopy revealed an improvement in the appearance of the lesion (Fig. 3A, B). At that time, a urea breath test was negative.

Twelve months after the conclusion of the eradication therapy, the regression of the lesion was obvious. A histological examination of the biopsy specimens revealed no evidence of lymphoma cells. The patient received no further treatment; however, she has been closely followed up for 5.5 years with sequential endoscopies to obtain biopsies for histological examinations. There has so far been no evidence of any recurrence of lymphoma.

Discussion

FL is a neoplasm of follicular center B cells and is one of the most common subtypes of non-Hodgkin’s lymphoma [NHL (8)]. The majority of FL are nodal, although the lesions can be extranodal in some patients. The GI tract is the most commonly involved extranodal site of NHL (9), and FL is more frequently found in the duodenum than in other areas of the GI tract (1).

The course of the disease is usually characterized by a response to initial therapy, followed by recurrent relapse,
sometimes associated with histologic transformation into high-grade diffuse large B-cell lymphoma (10). Treatment decisions are complicated by the many effective options, including surgical treatment, radiotherapy (11) and a combination of conventional chemotherapy and the administration of rituximab (12, 13).

Therapy for early-stage duodenal FL is not required unless significant clinical symptoms are present or until disease progression is observed. Most cases of nodal FL are diagnosed at an advanced clinical stage (14). Primary duodenal FL resembles nodal FL, except that the former has a high incidence of early-stage lesions and low-grade histology (2, 15), with a favorable prognosis (3). Advani et al. reported that survival in selected patients with early-stage FL does not seem to be compromised when the use of a “no initial therapy” approach is substituted for conventional therapy (16).

MALT lymphoma arises most frequently in the GI tract. The stomach is the most common site of this lymphoma (17), and an etiologic relationship with H. pylori infection has been documented (4). Primary MALT lymphoma also develops in the duodenum and is occasionally sensitive to H. pylori eradication (18).

It is not clear whether treatment with antibiotic therapy for H. pylori is effective for FL of the duodenum. However, Toyoda et al. reported a case of duodenal FL that regressed following the eradication of H. pylori (5). The patient did not visit as scheduled for endoscopy within two months after eradication therapy. Therefore, the follow-up examination was performed five months later. The endoscopic examination showed that the lesion had reduced in size. We herein reported another case in which eradication of H. pylori was effective for treating duodenal FL. These findings suggest that some cases of duodenal FL are dependent on antigenic stimulation, similar to MALT lymphomas, and that duodenal FL has a similar etiology to MALT lymphoma (12, 19).

H. pylori infects ectopic or metaplastic gastric mucosa in the duodenum. In the present case, a urea C13 breath test suggested the presence of H. pylori, at least in the upper GI tract; however, direct detection of H. pylori in the duodenum was not performed. Therefore, there is a possibility that another infectious agent was present that was eradicated by the antibiotics in this case.

On the other hand, spontaneous regression has been reported to occur in some untreated FL patients (20). Because little is known about the clinical course of duodenal FL, further studies with a large number of duodenal FL cases and long-term follow-up are needed. An association between duodenal FL and H. pylori infection has not been established; however, our case demonstrates that the eradication of H. pylori infection as the initial approach to treating FL localized in the duodenum can be considered in specific situations, such as patient refusal to receive radiotherapy or chemotherapy, and especially in cases of patients with a poor general condition. In this study, we showed that the eradication of H. pylori is a possible treatment option in patients with duodenal FL associated with H. pylori infection.

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

References

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