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CASE REPORT

Mucosa-associated lymphoid tissue lymphoma of the transverse colon: A case report

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Abstract

We herein present a case of a 75-year-old female with mucosa-associated lymphoid tissue (MALT) lymphoma of the transverse colon with the stage IE (Ann Arbor classification). Colonoscopy revealed the tumor's appearance as a IIa plus IIc-like early colon cancer as defined according to the macroscopic classification of the Japanese Research Society for Cancer of Colon, Rectum and Anus, measuring less than 2 cm in diameter. Histologically, the tumor was diagnosed as MALT lymphoma because of the presence of lymphoepithelial lesions consisting of diffuse proliferation of atypical lymphocytes and glandular destruction. The majority of these lymphocytes immunohistochemically stained for the B-lymphocyte marker. The patient first underwent *H pylori* eradication therapy with Lansap®. However, the tumor size gradually increased over the next 4 mo and the patient eventually underwent surgical resection. The operative procedure included a partial colectomy with dissection of the paracolic lymph nodes. The tumor measured 45 mm x 30 mm in diameter and histological examination showed that the lymphoma cells had infiltrated the muscle layer of the colon without nodal involvement. The patient has had no recurrence postoperatively without any chemotherapy.

Key words: Mucosa-associated lymphoid tissue; Malignant lymphoma

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INTRODUCTION

The term mucosa-associated lymphoid tissue (MALT) lymphoma was first introduced by Isaacson and Wright[1] in 1983. This entity includes low-grade gastric B-cell lymphoma and immunoproliferative small intestinal disease. MALT lymphomas occur in a variety of extranodal organs, such as the gastrointestinal (GI) tract and the non-GI tract, in which the stomach is the most common site[2,3]. Since convincing evidence has been presented showing the relationship between *H pylori* and gastric MALT lymphoma, the therapeutic strategy has been altered for patients with gastric MALT lymphoma in the early stages[4-8]. In contrast, a treatment for colonic MALT lymphoma has not yet been established. In the present report, we describe a case of colonic MALT lymphoma which did not response to *H pylori* eradication treatment and, therefore, underwent a surgical resection, and also provide a literature review on this rare entity.

CASE REPORT

A 75-year-old female was admitted to Nagasaki Prefectural Shimabara Hospital for surgical treatment of MALT lymphoma of the transverse colon on June 21, 2005. The patient had shown a positive fecal occult blood test on January 20, 2005 without any clinical symptoms and signs. Her past histories included hypertension, diabetes mellitus, and cholecystolithiasis. The results of complete blood counts, blood chemistries and tumor markers, such as carcinoembryonic antigen, were all within the normal limits. Colonoscopy revealed the tumor's appearance as IIa plus IIc-like early colon cancer[9], measuring less than 2 cm in diameter, in the transverse colon (Figure 1). Biopsy specimens histologically showed lymphoepithelial lesions with diffuse proliferation of atypical small lymphocytes and some glandular destruction. These lymphocytes immunohistochemically showed diffusely positive staining for L-26 (Figure 2) and bcl-2, but negative staining for CD3, CD5, CD10, CD79a, UCHL-1 and cyclin D1. These findings were compatible with MALT lymphoma of the colon. Barium enema showed a flat-elevated lesion in the transverse colon (Figure 3). Abdominal and chest CT demonstrated neither abnormal lesions nor

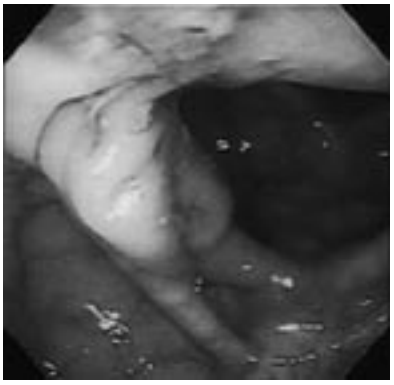

Figure 1 Colonofiberscopy showing the tumor's appearance as a IIa plus IIc-like early colon cancer.

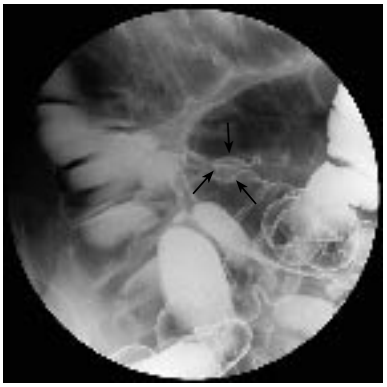

Figure 3 Barium enema showing a flat and well-circumscribed tumor in the transverse colon (arrows).

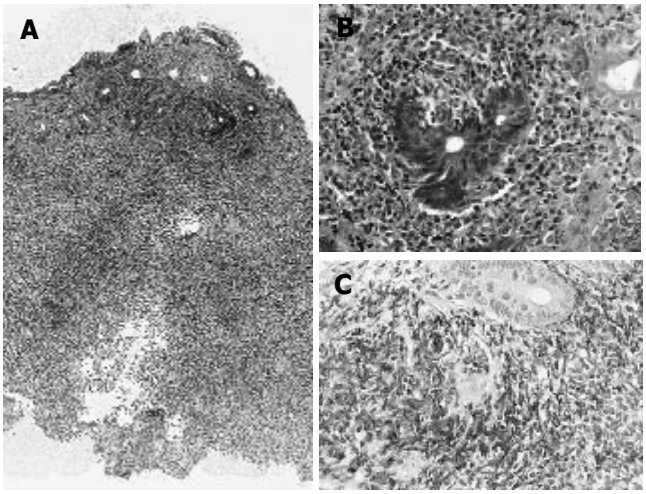

Figure 2 Biopsy specimens histologically showing diffuse proliferation of atypical small lymphocytes in the mucosal layer (**A**: x 40 magnification, HE) and glandular destruction (**B**: x 200 magnification, HE). These lymphocytes immunohistochemically showing diffusely positive staining for L-26 (**C**; x 200 magnification, ABC method).

Figure 4 Resected specimens showing a flat-elevated tumor with slight depression, measuring 45 mm x 30 mm in diameter.

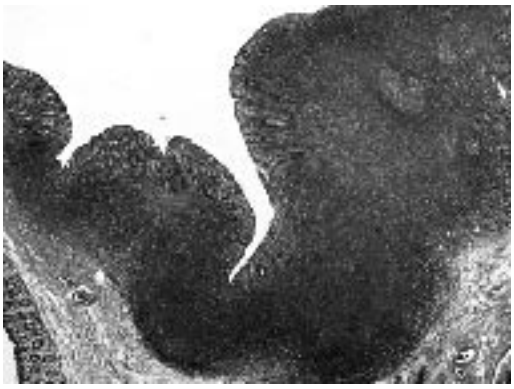

Figure 5 The lymphoma cells mainly infiltrated into the mucosal and submucosal layers, and partly infiltrated into the muscular layer of the colon (x 20 magnification, HE).

enlargement of lymph node. According to the Ann Arbor classification, this MALT lymphoma belonged to the stage IE. The patient first underwent *H pylori* eradication therapy with Lansap® because of positive reaction to a urea breath test (UBT). However, over the course of 4 mo, the tumor gradually increased in size, although *H pylori* were eradicated. The patient was considered to be a non-responder to eradication therapy, and was indicated for surgical resection. A partial colectomy with dissection of the paracolic lymph nodes was performed on June 23, 2005 (Figure 4). The tumor grossly appeared to be a IIa plus IIc-like early colon cancer, measuring 45 mm × 30 mm in diameter. Resected specimens were histologically and immunohistochemically reconfirmed to be MALT lymphoma without nodal involvement. The lymphoma cells infiltrated mainly into the mucosa and submucosal layer, and partly infiltrated into the muscular layer of the colon (Figure 5). The patient has had no recurrence postoperatively without any chemotherapy.

DISCUSSION

MALT lymphoma is defined as extra-nodal marginal zone B-cell lymphoma of MALT type in peripheral B-cell lymphoma according to morphologic features, immunophenotype, genetic features, postulated normal counterpart, and clinical features[10,11].

H pylori eradication therapy is currently widely recognized as an initial therapy in cases with low-grade (stage I) gastric MALT lymphoma[12-14]. In contrast, it has not yet been clarified whether *H pylori* eradication, or chemotherapy, or surgery should be performed in colonic MALT lymphoma compared with gastric MALT lymphoma, because the colorectal MALT lymphomas are rare. The individual clinical details of colorectal MALT lymphoma are summarized in Table 1[15-27]. Some reports have

Table 1 Colorectal MALT lymphoma in the English literatures

Author	Yr	Age/Sex	Location/Size	Symptoms/Signs	*H pylori*	Treatment	Outcome
Schmid[15]	1994	65/M	S/2.5 cm	ND	ND	Polypectomy	NED for 9 mo
	1994	47/M	T/1.5 cm	ND	ND	Polypectomy and chemotherapy	NED for 24 mo
	1994	64/M	T/1.5 cm	ND	ND	Left hemicolectomy	Died, 7 d (Cardiac failure)
Matsumoto[16]	1997	72/F	R/ND	Rectal bleeding	+	Eradication	NED for 12 wk
Yasui[17]	1999	76/M	C/30 × 15 mm	Fecal occult blood	ND	Partial resection[2]	ND
Orita[18]	1999	64/F	R/3.4 × 4.8 cm	Fecal occult blood	ND	Abdominoperineal resection	NED for 35 mo
Inoue[19]	1999	62/F	R/ND	Hematochezia	-	Eradication	NED for 53 wk
Raderer[20]	2000	67/M	D[1]/1.5 cm	None	+	Eradication	NED for 4 mo
Hasegawa[21]	2000	72/F	S/3.0 × 1.5 cm	Abdominal pain, fever	ND	Sigmoidectomy	ND
Yoshimura[22]	2002	74/M	T/8 × 4 cm	Fecal occult blood	ND	Chemotherapy	NED for 20 mo
Nakase[23]	2002	66/F	D, S, R/ND	Hematochezia	-	Eradication	NED for 1.5 yr
	2002	33/F	R/ND	Fever, hematochezia	-	Eradication	NED for 10 mo
	2002	62/F	R/ND	Hematochezia	-	Eradication	NED for 6 mo
Hisabe[24]	2002	70/F	R/1.5 cm	Abdominal discomfort	-	Eradication	NED for 20 mo
Takada[25]	2003	44/M	C/1.1 × 0.9 cm	Fecal occult blood	-	Partial resection[2]	ND
Lee[26]	2005	47/M	R/ND	Tenesmus, mucoid sool	-	Chemotherapy and radiation	NED for 3 mo
Kikuchi[27]	2005	71/M	R/3.5 cm	Fecal occult blood	-	Eradication[3]	NED for 12 mo
	2005	80/F	C, R/2.5 cm	Anal bleeding	-	Eradication	NED for 6 mo
	2005	70/F	R/1.5 cm	Abdominal discomfort	-	Eradication	NED for 20 mo
Our case	2006	75/F	T/4.5 × 3.5 cm	Fecal occult blood	+	Partial resection after eradication	NED for 12 mo

Location; R: Rectum, S: Sigmoid colon; D: Descending colon; T: Transverse colon; C: Cecum; ND: Not described; NED: No evidence of disease. [1]This patient had MALT lymphomas in the stomach and the descending colon, simultaneously. [2]These patients performed laparoscopy-assisted colon resection. [3]This patient has received repeated eradication.

described the successful regression of colorectal MALT lymphoma by means of eradication therapy in *H pylori*-positive patients[16,20]. Even in cases with colorectal MALT lymphoma negative for *H pylori*, the regression of the tumor was also recognized as a result of *H pylori* eradication therapy[19,23,24,27]. In prospective studies of gastric MALT lymphoma, eradication therapy was not effective in patients negative for *H pylori*[28,29]. Grunberger *et al*[30] reported that antibiotic eradication therapy was not effective in patients infected with *H pylori* suffering from extra-gastric MALT lymphoma. Therefore, they suggested that *H pylori* did not play a role in the development of extra-gastric MALT lymphomas. Similarly, antibiotic eradication therapy was not effective in our present case. These results may suggest that colorectal MALT lymphomas are not directly related to *H pylori* infection, while gastric MALT lymphomas are strongly associated with *H pylori* infection. In the future, a definite pathogenesis of colorectal MALT lymphoma should be clarified when cases of colorectal MALT lymphomas have accumulated. As a speculation, colorectal MALT lymphomas may be caused by unknown antibiotic-sensitive microorganisms other than *H pylori*, although that is not clear. In gastric MALT lymphoma, indeed, *Helicobacter heilmannii*-associated MALT lymphoma other than *H pylori* has been reported to be completely regressed by eradication therapy[31].

Surgical resection is mandatory when a colorectal MALT lymphoma does not respond to eradication therapy or chemotherapy, and it is localized without dissemination.

In conclusion, the present case with colonic MALT lymphoma eventually underwent surgical resection of the colon after the failure of eradication therapy. Surgical intervention is now the procedure of choice for colorectal MALT lymphoma because its pathogenesis and therapeutic strategy have not yet been established.

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