Ann Colorectal Res. 2013 December; 1(3): 106-10. DOI: 10.17795/acr-13953

Published online 2013 October 30. **Case Report**

Primary Mucosa-Associated Lymphoid Tissue Lymphoma of the Rectum

Shapour Omidvari [1], Hamid Nasrolahi [1,*], Leila MoaddabShoar [1], Sayed Hasan Hamedi [1], Mohammad Mohammadianpanah [2], Yahya Daneshbod [3], Mansour Ansari [1], Niloofar Ahmadloo [1], Ahmad Mosalaei [4]

[1]Department of Radiation Oncology, Namazi Hospital, Shiraz University of Medical Sciences, Shiraz, IR Iran
[2]Colorectal Research Center, Shiraz University of Medical Sciences, Shiraz, IR Iran
[3]Dr. Daneshbod Pathology Laboratory, Shiraz, IR Iran
[4]Shiraz Institute for Cancer Research, Shiraz University of Medical Sciences, Shiraz, IR Iran

[*]*Corresponding author*: Hamid Nasrolahi, Department of Radiation Oncology, Namazi Hospital, Shiraz University of Medical Sciences, Shiraz, IR Iran. Tel: +98-7116125170, Fax: +98-7116474320, E-mail: nasrolahihamid@yahoo.com

Received: July 31, 2013; **Revised:** September 12, 2013; **Accepted:** November 18, 2013

Introduction: Mucosa-associated lymphoid tissue (MALT) lymphoma most commonly involves the stomach and its treatment is surgery, antibiotic therapy or radiotherapy. Rectal MALT is not only so rare, but also the treatment is not clear as gastric MALT.
Case Presentation: Our patient was a 66 year-old man presenting with 5-6 months abdominal pain and anemia. In colonoscopy, a rectal ulcer was found and biopsy revealed MALT lymphoma. Physical examination and staging evaluations had normal results. Radiotherapy was started for him but he did not tolerate radiotherapy and instead received chemotherapy. After 38 months of follow up, he was fine.
Conclusions: The incidence of rectal MALT is rare, and treatment is not so clear. The results on H. pylori eradication, radiotherapy and chemotherapy are more controversial.

Keywords: Rectum; Lymphoma, B-Cell, Marginal Zone; Drug Therapy; Radiotherapy

1. Introduction

Lymphoma is the 6th common cause of cancer related death in America, and unfortunately its incidence is increasing (1). Mucosa-Associated Lymphoid Tissue (MALT) lymphoma is responsible for 5% of all lymphomas. The most frequently involved organ by MALT is the stomach (2). The first recommended treatment in gastric MALT lymphoma is H. pylori eradication. Other therapeutic modalities are also effectively used. Radiotherapy is administered if antibiotic therapy is not successful. Systemic agents such as rituximab and chemotherapy are reserved for disseminated patients (3). Although gastrointestinal (GI) tract is the most location for extra nodal lymphoma, colorectal lymphoma is rare and even rectal primaries are less common (1). For rectal MALT lymphoma, treatment is not as clear as in gastric cases. We here present a man with rectal MALT lymphoma and his treatment course.

2. Case Presentation

The patient was a 66 year-old man with abdominal pain for 5-6 months. Physical examination had normal findings with no significant positive past medical or family history. Abdominal sonography and blood chemistry tests had normal results. Complete blood count showed anemia (Hb = 10). Upper endoscopy was done for him, revealing no pathology, also urease test for H. pylori was negative. Colonoscopy was performed. In the rectum, a large single ulcer was found and biopsy showed MALT lymphoma. Immunohistochemistry was performed, being positive for CD20 and Bcl-2 which is consistent with low grade B-cell lymphoma (Figures 1,2,3 and 4). In May 2010, the patient was referred to our radiation oncology ward for treatment. Physical examination, blood chemistry tests and LDH were normal. Staging work up including the chest, abdomen and pelvic CT scan showed no evidence of tumor spread. We started radiotherapy to the whole pelvis with 1.8 Gy per fraction for him but during the treatment he developed severe abdominal pain and fresh rectal bleeding. Supportive care was not effective and radiation was stopped after 2200 cGy. After one month, the patient's has improved and radiotherapy was restarted, but rectal bleeding was restarted after one day. So irradiation was discontinued and chemotherapy was started for him. He received six cycles of CHOP (cyclophosphamide, vincristine, doxorubicin and prednisolone) and 38 months after the diagnosis, he was completely fine and under regular follow up.

Implication for health policy/practice/research/medical education:
This article reports a man with rectal MALT lymphoma. It is not only a rare disease, but also no definite treatment is known. We herein report this case and review literature for similar reports and outcome.

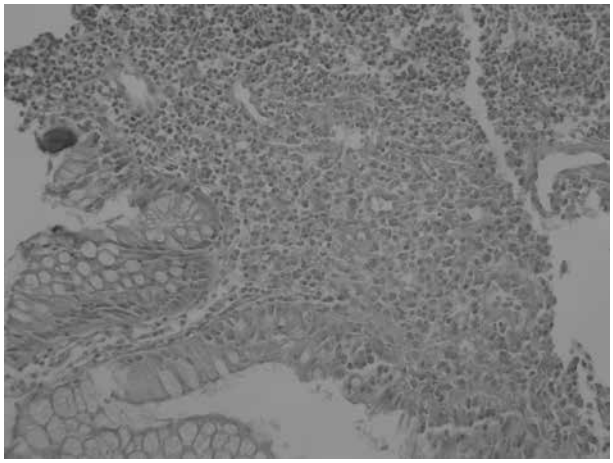

Figure 1. Section of Rectal Mucosal Lesion Shows Diffuse Small to Medium Sized Lymphocytic Infiltration With Dispersed Chromatin and Inconspicious Nucleoli, and Pale Cytoplasm With Crypt Detruction. Focal Plasmacytic Differentiation Is Present (x200, H&E).

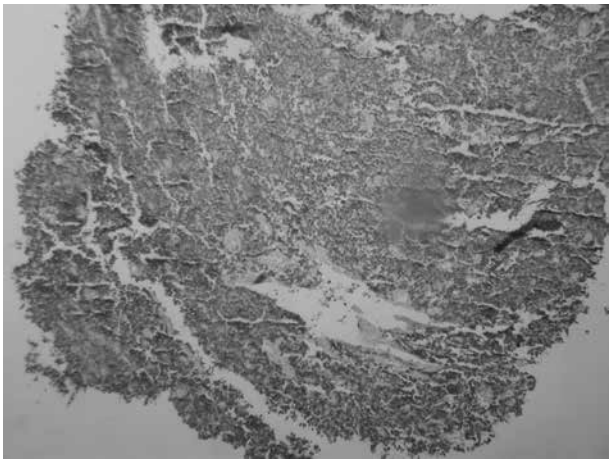

Figure 3. Lymphocytes Are Diffuse Bcl-2 Positive (Immunoperoxidase Stain).

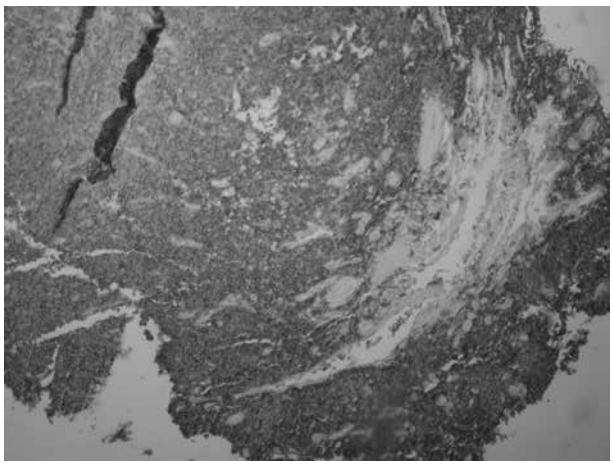

Figure 2. Lymphocytes Show Diffuse CD20 Positivity (Immunoperoxidase Stain).

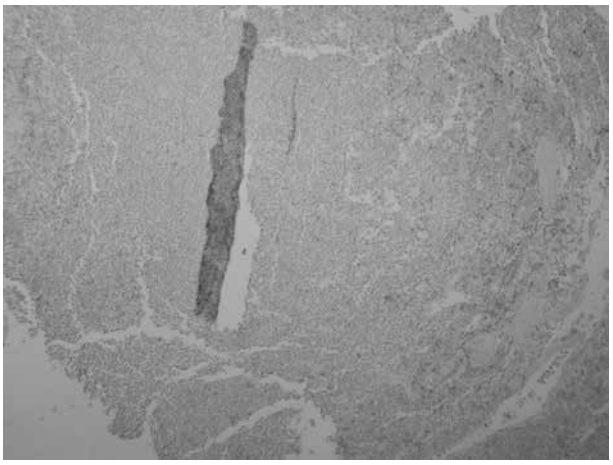

Figure 4. Lymocytes Are Mainly Diffuse CD3 Negative With Few Scattered Positive Cells (Immunoperoxidase Stain).

3. Discussion

Gastrointestinal tract is the most common location in primary extranodal lymphoma, but colorectal lymphoma is not so common. Colorectal lymphomas accounts for only 1.4% of Non Hodgkin's Lymphoma (NHL) and less than 1% of colorectal malignancies. In 70% of colorectal lymphomas, the cecum and ascending colon are involved. Histologically, diffuse large B-cell lymphoma is the most common histologic type. MALT is less common than LBCL and is an indolent disease (1). Ahlawat in 2006 found 30 reports on rectal MALT in English literature, and most of these literatures were Japanese (4). We summarized the cases found in Pubmed with keywords "Lymphoma" ,"Rectal", "Rectum" and "MALT" in Table 1. We found 25 cases in English literature (Table 1). We had no access to clinical data of 10 patients in three reports (5 - 7).

Because of the rarity of this kind and location of the tumor, there is no consensus on the treatment. Some authors suggest no treatment more than resection for colorectal MALT (1). Orita et al. reported a case with rectal MALT who had not received any treatment after tumor resection. After 35 months, the tumor was well controlled (20). Even spontaneous tumor regression has been reported. Takenaka et al. reported an old man who was not operable, and did not receive chemotherapy or radiotherapy due to multiple underlying diseases. He was a 76 year-old man with renal and heart disease. His disease showed spontaneous regression and after 19 months he was tumor free (21).

Table 1. Reports and Results on Rectal Lymphoma

Author	Age, y	Gender	Surgery	Chemotherapy	Radiotherapy, Gy	Antibiotic Therapy	DFS[a], mo
Ersoz (2)	42	female	trans-anal resection	CHOP[a]	no	no	
Amouri (8)	46	female	no	no	34	yes	
Nomura (9)	53	female	no	no	no	yes	
Okamura (10), 3 cases							
	56	female	no	no	30	no	75
	62	female	no	no	30	no	13
	65	male	no	no	30	no	65
Foo (11)	60	male	no	no	45	no	41
Kobayashi (12)	26	male	no	no	yes	no	
Kagawa (13)	62	male	no	rituximab	no	no	
Park (14)	44	male	no	CHOP	no	no	11
De Sanctis (15)	66	male	no	no	no	yes	34
Yamamoto (16)	33	female	no	no	30	yes	
Watanabe (17)	75	female	resection 3 times	no	no	no	48
Chahil (18)	78	female	no	no	yes	yes	
Samee (19)	68	female	yes	no	yes	no	48
Present case	66	male	no	CHOP	24	no	38

[a] Abbreviations: CHOP, Cyclophosphamide; DFS, Disease Free Survival

It is well known that H. pylori eradication is an effective treatment for gastric MALT (2). But regarding rectal MALT, the results are controversial. Grunberger et al. in a prospective study evaluated the role of antibiotic therapy for H. pylori positive extragastric MALT. Among 16 patients who were H. pylori positive and were treated for eradication, only one case showed tumor response. Others showed no response and received local therapy (8). Amouri et al. reported a 46 year-old woman with rectal MALT. Because she had H Pylori infection, first she received antibiotic therapy for Hpylori eradication. But her disease showed no improvement, then she received 34 Gy with complete response (22). Nakase et al. reported tumor regression after antibiotic therapy for H. pylori in three H. pylori negative rectal MALT patients (23). There are other reports on successful MALT treatment with antibiotics in H.pylori negative patients (9, 24). They suggested that micro-organisms different from H. pylori are responsible for rectal MALT.

Gastric MALT is radiosensitive and usually well controlled by 30 Gy radiation (10). Regarding radiotherapy, although few reports are available, the results are more similar to those of gastric MALT. Isobe and Tsang showed that moderate dose radiotherapy is effective in achieving durable response in MALT (25, 26). Goda et al. showed similar results. In their study among 167 patients, 31 recurrences occurred and seven cases had transformation to DLBCL (27). Studies mentioned included MALT lymphoma of different organs, mostly the orbit, thyroid, salivary glands and stomach. Due to its rarity, rectal MALT has not been studied widely. Foo et al. reported a 60 year-old man with rectal MALT treated with 45 Gy, and had complete response (11). Kobayashi et al. reported a 26 year-old man who underwent only biopsy of the rectum and received adjuvant radiotherapy with complete response (12). We first decided to prescribe 30 Gy to the pelvis, but unfortunately he developed severe dysuria and fresh rectal bleeding. So, radiotherapy was stopped after 24 Gy, and chemotherapy was started for him.

Our patient may be considered as a case of overtreatment. Although radiation with fractionated doses as low as 25 Gy has been used for nodal MALT lymphoma, most reports series on Rectal lymphoma as listed in the Table 1, used at least 30 Gy (28). Our patient did not complete his planned radiation up to 30 Gy; and due to persistent rectal bleeding, chemotherapy was recommended for tumor control.

Although most MALT lymphomas are well controlled by local therapy (radiotherapy or surgery), there are reports indicating that MALT has a higher rate of systemic recurrence than previously assumed. Raderer et al. found that one third of gastric lymphoma and a half of the extragastric MALT lymphomas are systemic (29). Zinzani et al. used chemotherapy in 31 non-gastric MALTs. Eleven cases received CVP (cyclophosphamide, vincristine and prednisolone) and 20 cases FM (fludarabine-mitoxantrone) and all had complete response. Four cases developed recurrence after receiving CVP and received FM as the second line which was successful. Five year survival was 100% (30). Rituximab is a CD20

antibody, and is successfully used for MALT in other organs (3). Kagawa administered this agent in a case of rectal MALT with complete remission (13).

Ersoz et al. reported a 44 year-old woman who had no evidence of H. pylori infection. After complete tumor removal, she received CHOP as chemotherapy. They believed that local tumor removal and chemotherapy are the best treatments for rectal MALT (2). Because our patient could not complete radiotherapy course, we prescribed six cycles of CHOP. Controversy on rectal MALT is continuing and more studies including more patients with more follow up duration are needed to make a more reliable conclusion.

Acknowledgements

The authors would like to thank Dr. Nasrin Shokrpour at Clinical Research Development Center of Nemazi Hospital for editorial assistance.

Authors' Contribution

Shapour Omidvari: involved in conception, data collection, literature review, writing the manuscript and approval of the final version. Hamid Nasrolahi: involved in conception, data collection, literature review, writing the manuscript and approval of the final version and to accept responsibility for contents of the final manuscript. Sayed Hasan Hamedi: involved in conception, data collection, writing the manuscript, and approval of the final version. Mohammad Mohammadianpanah: Involved in design and data collection, interpretation, literature review, writing, and revising the manuscript, and approval of the final version. Yahya Daneshbod: Involved in conception, design, data collection, literature review and writing the manuscript, and approval of the final version. Ahmad Mosalaei: involved in conception, data collection, writing the manuscript and approval of the final version. Niloofar Ahmadloo: Involved in design and data collection, analysis, and interpretation, and writing, and revising the manuscript, and approval of the final version. Mansour Ansari: involved in data collection, literature review, writing the manuscript and approval of the final version.

Financial Disclosure

No financial disclosure.

Funding/Support

No fund or support.

References

1. Quayle FJ, Lowney JK. Colorectal lymphoma. *Clin Colon Rectal Surg.* 2006;**19**(2):49–53.
2. Ersoz F, Toros AB, Bektas H, Ozcan O, Koc O, Arikan S. MALT lymphoma of the rectum, presenting with rectal prolapsus: a case report. *Cases J.* 2010;**3**(1):33.
3. Sagaert X, Tousseyn T. Marginal zone B-cell lymphomas. *Discov Med.* 2010;**10**(50):79–86.
4. Ahlawat S, Kanber Y, Charabaty-Pishvaian A, Ozdemirli M, Cohen P, Benjamin S, et al. Primary mucosa-associated lymphoid tissue (MALT) lymphoma occurring in the rectum: a case report and review of the literature. *South Med J.* 2006;**99**(12):1378–84.
5. Chihara D, Kagami Y, Oki Y, Kato H, Onoda H, Ine S, et al. R-CHOP therapy for MALT lymphoma of the rectum. *Eur J Haematol.* 2010;**84**(1):84–6.
6. Mathew A, Humburg BC, Bayer MG. A case of rectal MALT lymphoma treated by endoscopic resection. *Am J Gastroenterol.* 2009;**104**(1):255–6.
7. Niino D, Yamamoto K, Tsuruta O, Maeda T, Yakushijin Y, Aoki R, et al. Regression of rectal mucosa-associated lymphoid tissue (MALT) lymphoma after antibiotic treatments. *Pathol Int.* 2010;**60**(6):438–42.
8. Grünberger B, Wöhrer S, Streubel B, Formanek M, Petkov V, Puespoek A, et al. Antibiotic treatment is not effective in patients infected with Helicobacter pylori suffering from extragastric MALT lymphoma. *J Clin Oncol.* 2006;**24**(9):1370–5.
9. Nomura E, Uchimi K, Abue M, Kon H, Noguchi T, Suzuki S, et al. [Regression of MALT lymphoma of the rectum after Helicobacter pylori eradication therapy in a patient negative for Helicobacter pylori]. *Nihon Shokakibyo Gakkai Zasshi.* 2010;**107**(9):1466–73.
10. Okamura T, Suga T, Iwaya Y, Ito T, Yokosawa S, Arakura N, et al. Helicobacter pylori-Negative Primary Rectal MALT Lymphoma: Complete Remission after Radiotherapy. *Case Rep Gastroenterol.* 2012;**6**(2):319–27.
11. Foo M, Chao MW, Gibbs P, Guiney M, Jacobs R. Successful treatment of mucosa-associated lymphoid tissue lymphoma of the rectum with radiation therapy: report of a case. *Dis Colon Rectum.* 2008;**51**(11):1719–23.
12. Kobayashi T, Takahashi N, Hagiwara Y, Tamaru J, Kayano H, Jinnai I, et al. Successful radiotherapy in a patient with primary rectal mucosa-associated lymphoid tissue lymphoma without the API2-MALT1 fusion gene: a case report and review of the literature. *Leuk Res.* 2008;**32**(1):173–5.
13. Kagawa M, Okamura S, Okamoto K, Kitamura S, Kimura T, Niki M, et al. [Successful rituximab monotherapy in a patient with mucosa-associated lymphoid tissue lymphoma of the rectum with trisomy 3, 18]. *Nihon Shokakibyo Gakkai Zasshi.* 2010;**107**(4):612–9.
14. Park H, Chung JW, Kim AJ, Park SY, Rim MY, Jang YR, et al. A case of rectal mucosa-associated lymphoid tissue lymphoma diagnosed by endoscopic unroofing technique. *Korean J Gastroenterol.* 2012;**59**(6):428–32.
15. De Sanctis V, Marignani M, Angeletti S, Assisi D, Armosini V, Valeriani M, et al. Anti-Helicobacter pylori therapy in primary MALT lymphoma of rectum. *Tumori.* 2012;**98**(4):e105–10.
16. Yamamoto T, Shinji A, Mukawa K, Ohta H, Komatsu K, Komatsu M, et al. [A case of rectal mucosa-associated lymphoid tissue lymphoma (MALT) successfully treated by radiation therapy]. *Nihon Shokakibyo Gakkai Zasshi.* 2011;**108**(7):1231–6.
17. Watanabe T, Suda T, Hirono H, Hasegawa K, Soga K, Shibasaki K, et al. Successful treatment of mucosa-associated lymphoid tissue lymphoma in a patient with gastric and rectal lesions with metachronous and ectopic development. *Rare Tumors.* 2011;**3**(2).
18. Chahil N, Bloom P, Tyson J, Jazwari S, Robilotti J, Gaultieri N. Novel approach to treatment of rectal mucosa-associated lymphoid tissue lymphoma. *BMJ Case Rep.* 2011;**2011**:2969.
19. Samee A, Rukin N, Siddiqui I, Halliday M, Farmer M. A solitary rectal mucosa-associated lymphoid tissue (MALT) lymphoma. *BMJ Case Rep.* 2010;**2010**.
20. Orita M, Yamashita K, Okino M, Enoki T, Noshima S, Morita N, et al. A case of MALT (mucosa-associated lymphoid tissue) lymphoma occurring in the rectum. *Hepatogastroenterology.* 1999;**46**(28):2352–4.
21. Takenaka R, Tomoda J, Sakata T, Ichiba T, Motoi M, Mizuno M, et al. Mucosa-associated lymphoid tissue lymphoma of the rectum that regressed spontaneously. *J Gastroenterol Hepatol.* 2000;**15**(3):331–5.
22. Amouri A, Chtourou L, Mnif L, Mdhaffar M, Abid M, Ayedi L, et al. [MALT lymphoma of the rectum: a case report treated by radiotherapy]. *Cancer Radiother.* 2009;**13**(1):61–4.
23. Nakase H, Okazaki K, Ohana M, Ikeda K, Uchida K, Uose S, et al.

The possible involvement of micro-organisms other than Helicobacter pylori in the development of rectal MALT lymphoma in H. pylori-negative patients. *Endoscopy.* 2002;**34**(4):343–6.
24. Inoue F, Chiba T. Regression of MALT lymphoma of the rectum after anti-H. pylori therapy in a patient negative for H. pylori. *Gastroenterology.* 1999;**117**(2):514–5.
25. Isobe K, Kagami Y, Higuchi K, Kodaira T, Hasegawa M, Shikama N, et al. A multicenter phase II study of local radiation therapy for stage IEA mucosa-associated lymphoid tissue lymphomas: a preliminary report from the Japan Radiation Oncology Group (JAROG). *Int J Radiat Oncol Biol Phys.* 2007;**69**(4):1181–6.
26. Tsang RW, Gospodarowicz MK, Pintilie M, Wells W, Hodgson DC, Sun A, et al. Localized mucosa-associated lymphoid tissue lymphoma treated with radiation therapy has excellent clinical outcome. *J Clin Oncol.* 2003;**21**(22):4157–64.
27. Goda JS, Gospodarowicz M, Pintilie M, Wells W, Hodgson DC, Sun A, et al. Long-term outcome in localized extranodal mucosa-associated lymphoid tissue lymphomas treated with radiotherapy. *Cancer.* 2010;**116**(16):3815–24.
28. Hoskin PJ, Díez P, Williams M, Lucraft H, Bayne M. Recommendations for the use of radiotherapy in nodal lymphoma. *Clin Oncol.* 2013;**25**(1):49–58.
29. Raderer M, Wohrer S, Streubel B, Troch M, Turetschek K, Jager U, et al. Assessment of disease dissemination in gastric compared with extragastric mucosa-associated lymphoid tissue lymphoma using extensive staging: a single-center experience. *J Clin Oncol.* 2006;**24**(19):3136–41.
30. Zinzani PL, Stefoni V, Musuraca G, Tani M, Alinari L, Gabriele A, et al. Fludarabine-containing chemotherapy as frontline treatment of nongastrointestinal mucosa-associated lymphoid tissue lymphoma. *Cancer.* 2004;**100**(10):2190–4.