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Abstract

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Primary Non-Hodgkin's Lymphoma of the Rectum: A Case Report

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A rare gastrointestinal tract neoplasm, primary non-Hodgkin's B-cell lymphoma in a 39-year-old, asymptomatic woman is described. The tumor was originally localized in the rectum without evidence of any other lymphoma-involved organ and treated by curative surgical procedure associated with postoperative chemotherapy.

Key words : **primary lymphoma, rectum, surgical treatment**

The majority of cases of lymphoma of the gastrointestinal tract are secondary to systemic lymphomas. Primary lymphomas are uncommon although non-Hodgkin's lymphomas have increased in incidence as a manifestation of acquired immune deficiency syndrome (AIDS), especially in the anorectal region (1). Of all rectal malignancies, primary lymphomas are very rare, representing only 0.1 to 1.3%, occurring in both sexes and mostly in adults although two cases in children were reported (2, 3). Distinction between primary and secondary colorectal lymphoma is important as the management of these two conditions differs significantly. This report deals with a case of a 39-year-old woman with a primary lymphoma originating from the rectum. Clinical, pathological, immunohistochemical and management data are presented.

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Subjects and Methods

Subject. In 1985, a 39-year-old asymptomatic woman consulted the First Department of Surgery, Okayama University Hospital. At proctosigmoidoscopy, a 20 mm sized rectal polyp (10 cm from the anal verge) was found, and endoscopic polypectomy was performed. The histological examination of the biopsied specimen revealed a benign lymphoid polyp of the rectum. In one month's period, another rectal polyp with the same result was found. After 2 years follow-up, she was suspected to have tumor in the rectum and underwent proctosigmoidoscopy. The biopsy histologically revealed a suspected malignant lymphoma. Biopsy of one and two month's interval showed inflammatory changes. Later, in 1989, an evident rectal tumor was identified by the use of barium enema (Fig. 1), and finally in the beginning of 1990, she was admitted. Physical examination was normal; she had no peripheral lymphoadenopathy, loss of weight nor palpable liver or spleen. On radiographic examination, lungs and mediastinum appeared normal, and peripheral blood counts were within normal limits. Proctoscopy revealed an elevated and firm tumor 7 cm

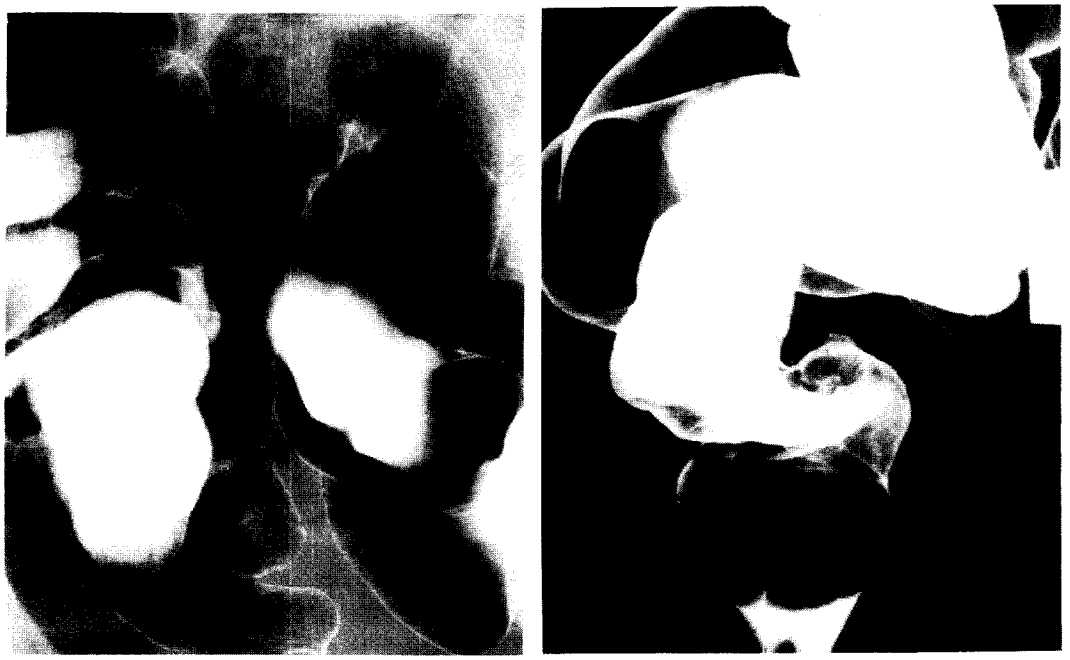

Fig. 1 Barium enema demonstrates a single tumor mass in the rectum.

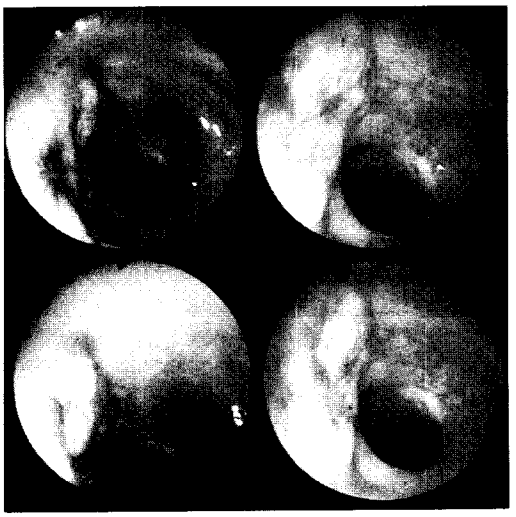

Fig. 2 Proctoscopic pictures show an elevated lesion slightly ulcerated in the center; right side shows closer view.

from the anal verge (Fig. 2). Thus, a low anterior resection was performed in this situation.

Methods. General investigation was performed to evaluate lymphoma staging. The diagnosis satisfied the criteria of Dawson *et al.* (1961) for primary gastrointestinal lymphomas (4), and the histopathology was categorized according to the lymphoma study group (LSG) classification (5). Immunoperoxidase staining was performed with Biotin-Steptavidin amplified system (Biogenex Lab, Dublin, CA, USA). Non-specific binding of immunoglobulin was blocked by 10 min-preincubation with normal goat serum on routinely deparaffinized fixed specimens and frozen sections. After blocking with endogenous peroxidase activity using 0.3 % H_2O_2-methanol, tissue sections were incubated with each MAB for 2 h at room temperature. Consequently, these were washed with TBS (phosphate buffered saline with 0.05 % of tween 20) and were reacted with biotinylated anti-mouse immunoglobulins for 30 min. Immediately after washing with TBS, peroxidase-conjugated steptavidin was applied for 30 min. The peroxidase was detected by 1.26 mM 3.3′-diaminobenzydine tetrahydrochloride and 0.005 % H_2O_2. Paraffin embedded histologic specimens were analysed using primary antibodies such as UCHL1 (Dako-Glostrup, Denmark), L26 (Kyowa-Medics, Tokyo, Japan), MB1, MT1 (Bioscience, Emmenbracke, Switzerland), LN1, LN2 (Techniclone International, Santa Ana, CA, USA), and Leukocyte common antigen (Dako-

Glostrup, Denmark). Histologic frozen sections were analysed using Leu 1, 2a, 3a, 4, 12, 14 (Becton-Dickinson) and light chains of immunoglobulins κ, λ (Tago, USA).

Results

The tumor was nodular, 3.9 × 4.8 × 2.7 cm in size, and confined to the rectal region with only one pararectal node involved. The gross appearance of the tumor is shown in Fig. 3. Histologically, lymphoma cells showed medium-sized nucleus and light eosinophilic cytoplasm similar to 'monocytoid B cells' (6). The lesion was diagnosed as diffuse lymphoma, medium-sized cell type according to LSG classification (Fig. 4) (5). The cell surface immunoglobulin was of lambda light chain monotype, and were positive for CD19, 22, 45R, w75 and L26 and negative for CD3, 4, 5, 8, 43, and 45RO (Table 1). After surgery she underwent chemotherapy regimen with cyclophosphamide, adriamycin, vincristine, bleomycin and prednisolone within seven days and was discharged one month later in a good stable condition.

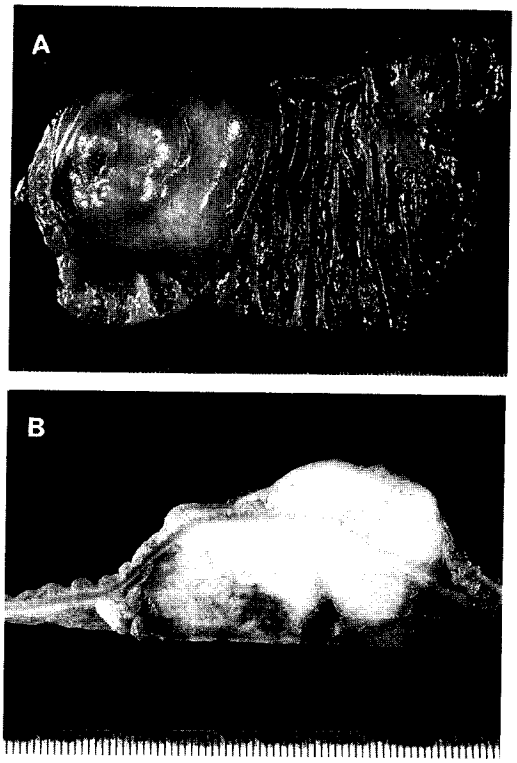

Fig. 3 Gross appearance of the tumor. A: Macroscopic appearance of the lymphoma well defined and with central ulceration. B: Cut section showing the involvement in all layers.

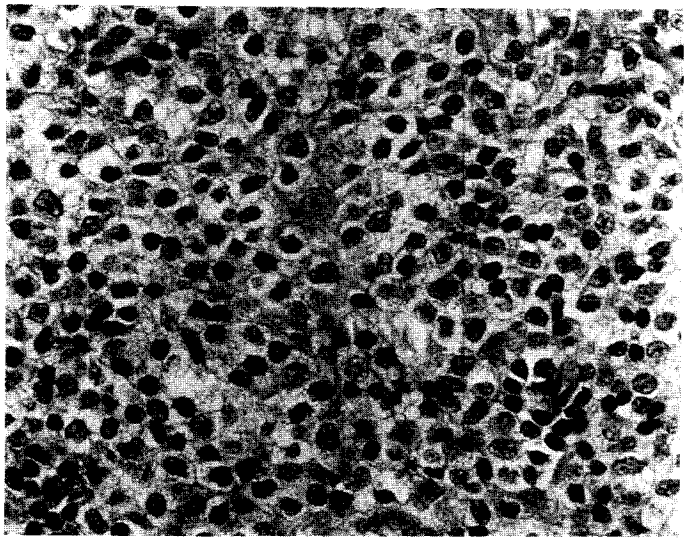

Fig. 4 Lymphoma cells with medium-sized nucleus and light eosinophlic cytoplasm showing the character of monocytoid B cells.

Table 1 Immunohistochemical examination

MAbs	CD Cluster	Specificity	Reactivity
Leukocyte common Antigen (LCA)	45	Pan-lymphocytes	+
L26		B-cell	+
MB1	45R	B-cell	+
LN1	W75	B-cell	+
Leu12	19	B-cell	+
Leu14	22	B-cell	+
LN2		HLADR	+
Leu1	CD5	T cell	−
Leu2a	CD8	s/c T cell	−
Leu3a	CD4	h/i T cell	−
Leu4	CD3	T cell	−
MT1	CD43	T cell	−
UCHL1	CD45RO	T cell	−
κ			−
λ			+

Discussion

Primary or secondary non-Hodgkin's lymphoma of the gastrointestinal tract is not uncommon, but primary malignant lymphoma of the rectum is rare, with incidence ranging from 0.1 to 1.3 % among all malignant rectal tumors (7, 8). This reported case had qualified the criteria of diagnosing primary lymphoma of the gastrointestinal tract as described by Dawson *et al.* (4). The anatomical structure of the rectum with minimal amount of lymphoid cells in its mucosa has been suggested as a cause of this uncommon localization although lymphoma associated with AIDS has increased in the past few years in homosexual men (1). While secondary lymphomas have a poor prognosis with only 15 % of 5-years survival rate, primary lymphomas of the rectum have a better prognosis of 5-years survival rate *i.e.* about 50 % especially with surgical treatment (9, 10). This patient had a tumor confined to the rectum with only one lymph node involved and categorically speaking is suitable for curative procedure. Although it was not possible to determine the relationship between previous benign lymphoid polyps and malignant lymphoma of the rectum in this case, there should be follow-up at short time intervals and serial biopsies may be necessary to detect the tumor at an early stage when curative surgical treatment is most recommendable.

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