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Case Report

Development of Intra-Orbital Follicular Lymphoma and Intra-Oral MALT-Type Lymphoma in a Single Patient

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Abstract

An 81-year-old woman with intra-orbital follicular large-cell lymphoma and intra-oral low-grade B-cell lymphoma, compatible with MALT-type lymphoma, is reported. Several hematopathologic features indicated that the two morphologically different lymphomas were originated from a single clone of cells, but no definite evidence to confirm this possibility could be obtained. Result of chemotherapy indicated difference in sensitivity of lymphoma cells of the two lesions to cytotoxic drugs.

Key words: Follicular lymphoma, MALT-type lymphoma, Histogenesis, T cell-rich variant.

Introduction

Non-Hodgkin's lymphoma arising from the mucosa-associated lymphoid tissue (MALT lymphoma), first described by Isaacson and Wright[1)] in 1983, has been reported with an increasing frequency to date. Although it is generally accepted that MALT-type lymphoma, which was difficult to characterize in the past, does exist, whether MALT lymphoma is a distinct clinicopathologic entity or not, is still a matter of debate[2-4)], because a lymphoma with similar hematopathologic features, *i.e.*, monocytoid B-cell lymphoma (MBCL), can develop *de novo* in the lymph node[5,6)]. One of the feature of MBCL is a relatively frequent association of follicular lymphoma[6-10)].

In this report, we describe a patient who developed intra-orbital follicular large-cell lymphoma and intra-oral MALT-type lymphoma.

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Case summary

An 81-year-old woman first noticed bilateral conjunctival swelling 19 months before admission. Because of the progressive nature of the process, she was admitted to our hospital in June, 1993. Neither loss of body weight, night drenching, nor fever was noted. Physical examination revealed bilateral intra-orbital masses, but there was no peripheral lymphadenopathy or hepatosplenomegaly. Complete blood count, serum analysis, bone marrow aspiration, and abdominal CT scan showed no abnormalities. She was diagnosed as having one of follicular large-cell lymphoma on the basis of a biopsy of the right intra-orbital mass. The tumors disappeared completely two and a half months after the initiation of chemotherrapy consisting of

vincristine, cyclophosphamide, and prednisolone. However, an intra-oral mass at the buccal region was found at that time. The mass was totally resected and it was histopathologically characterized as low-grade B-cell lymphoma, compatible with MALT-type lymphoma.

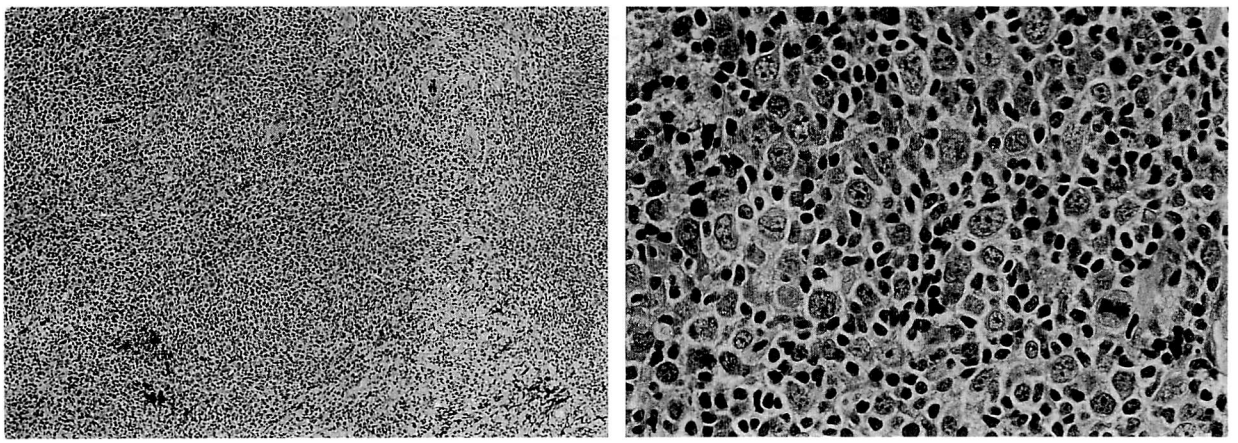
The patient was discharged from the hospital three months after admission. So far, no findings indicative of recurrence of the tumors were noted.

Hematopathologic findings

Histopathology

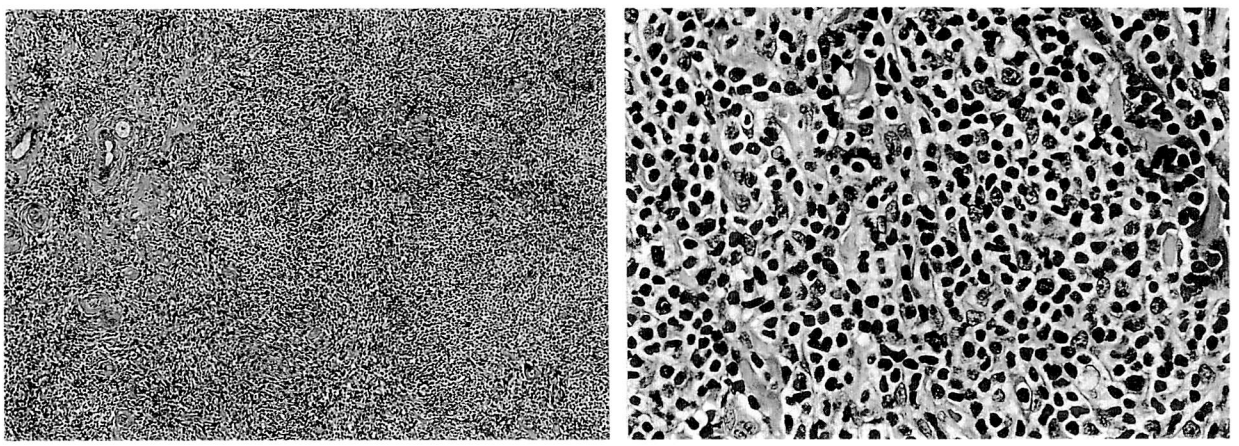
The orbital mass showed nodular proliferation of lymphoid cells in the collagenous tissue. Each nodule consisted of large lymphoid cells admixed with small cleaved cells and small lymphocytes. The large cells had round or oval-shaped nuclei with either finely dispersed or somewhat clumped chromatin and amphophilic cytoplasm (Fig. 1).

The oral mass was composed of diffuse proliferation of lymphoid cells with round or cleaved nuclei and fairly abundant pale cytoplasm. Large lymphoid cells were occasionally seen. Ductal structures with periductal hyalinization were present among the lymphoproliferation, but the lymphoepithelial lesion did not appear to be a significant feature. In addition to the nests of ductal epithelial cells, numerous vessels were filled with neoplastic lymphoid cells (Fig. 2).



A B

Fig. 1. Intra-orbital tumor. A (*left*): Follicular proliferation of lymphoid cells is seen. B (*right*): Proliferation of large noncleaved cells admixed with small lymphoid cells is evident in the center of each neoplastic follicle. (H & E. A, x 64; B, x320)



A B

Fig. 2. Intra-oral tumor. A (*left*): The tumor is composed of diffuse proliferation of lymphoid cells. Ductal structures are present at the left. B (*right*): The proliferating cells have small, but irregular, nuclei and pale cytoplasm. Intravascular involvement is seen at the right. (H & E. A, x 64; B, x320)

Immunohistochemistry

In frozen sections of the orbital mass, the proliferating cells were positive for surface Ig κ, CD19, CD20, and CD22, and were negative for surface Ig λ, CD10, CD21, CD5, CD2, CD3, CD4, CD8, and CD30. Ki-67-positive cells were occasionally present. The large cells were positive for CD20-cy and cytoplasmic Ig κ, and were negative for CD45RO and cytoplasmic Ig λ in paraffin sections.

In paraffin sections of the oral mass, cells with CD20-cy and those with CD45RO were equally present, but the size of the latter was smaller than that of the former. The larger cells were positive for cytoslasmic Ig κ and negative for cytoplasmic Ig λ. Frozen tissue of the oral mass was not available for study.

Gene amplification study

DNA sample was prepared from paraffin-embedded tissue of both orbital and oral masses. By semi-nested PCR[11] using consensus oligonucleotide primers for the framework 3 portion of the variable region (FR3A) and of the 3' portion of the joining region (LJH and VLJH) of the Ig heavy-chain gene (IgH)[12], the rearranged V-D-J fragments were clonally amplified in the orbital mass, but the amplified fragment in the oral mass was equivocal with regard to clonality. Nested PCR using primers for IgH (JH) and *bcl*-2 (both *mbr* and *mcr*)[13] showed no amplification in both samples.

Discussion

There are several hematopathologic features which indicate that the two lymphomas in the current case were originated from a single clone of cells. These include; 1) presence of intravascular neoplastic cells in the oral lesion (Fig 2B), 2) numerous reactive-appearing T cells in both lesions, 3) absence of CD10 expression in the orbital lesion, and 4) absence of amplification of rearranged *bcl*-2 in orbital as well as oral lesions. This possibility is supported by the reported findings that MALT-type lymphoma may mimic follicular lymphoma due to "follicular colonization"[14], that MBCL, which is closely related to, but may not be identical with, MALT-type lymphoma, is associated with follicular lymphoma with a relatively high frequency[6-10], and that follicular lymphoma can show partial monocytoid differentiation[15]. However, failure of definite clonal amplification of IgH in the oral lesion and lack of the oral frozen tissue humpered final determination of the common or different clonality of the two lymphomas. Proliferation of large noncleaved cells without "centrocyte-like" features in any part of the orbital lesion indicate the follicular growth patten not to be a result of "follicular colonization". Furthermore, sensitivity of lymphoma cells of the two lesions to cytotoxic drugs was different, because the oral mass was present at the time when the orbital lesion had completely regressed by chemotherapy,

Numerous reactive-appearing T cells in the oral lesion can lead to the interpretation that the lesion is a T cell-rich vatiant of MALT-type lymphoma. B-cell lymphomas with abundant reactive T cells have been reported as either pseudo T-cell lymphoma[16] or T cell-rich B-cell lymphoma[17]. It is stressed, however, that these B-cell lymphomas including "T cell-rich MALT-type lymphoma", while important in the diagnosis, should not be characterized as a disease entity until distinctiveness of their clinicopathologic features are confirmed.

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