
Radiation Therapy for Extranodal Lymphomas

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Editors

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 Springer

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ISBN 978-4-431-56433-1

ISBN 978-4-431-56435-5 (eBook)

DOI 10.1007/978-4-431-56435-5

Library of Congress Control Number: 2017946758

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Printed on acid-free paper

This Springer imprint is published by Springer Nature

The registered company is Springer Japan KK

The registered company address is: Chiyoda First Bldg. East, 3-8-1 Nishi-Kanda, Chiyoda-ku, Tokyo 101-0065, Japan

Preface

The paradigm in the treatment of malignant lymphomas has shifted dynamically with recent rapid advances in systemic pharmaceutical treatment. Previously, the utility of systemic therapy was severely limited because few effective chemotherapeutic agents were available. Therefore, radiation therapy played an important role in the treatment of malignant tumors. Today, many effective agents are available, including novel molecular targeted drugs such as rituximab. Consequently, malignant lymphomas can now be cured by systemic therapy.

Radiation therapy was previously very primitive. In the 1980s, tumors were usually treated using simple radiation fields. Because the tumor extent was unclear, the radiation fields had to be large. The standard treatment field for a malignant lymphoma was extremely large and the radiation doses were relatively high. Consequently, survivors developed unexpected complications, including secondary cancers and cardiovascular diseases. Therefore, many trials aimed to avoid radiation therapy for such disorders and currently few malignant lymphoma patients receive radiation therapy combined with standard chemotherapy. Hodgkin's lymphomas are usually treated with combination chemotherapy with or without very-low-dose radiation therapy. Nodal lymphomas are treated solely with combination chemotherapy. Only a few patients with very large mass lesions or those with mediastinal anaplastic large cell lymphomas receive radiation therapy combined with standard chemotherapy.

Today, highly sophisticated imaging modalities such as computed tomography (CT), magnetic resonance imaging (MRI), and positron emission tomography (PET)/CT yield detailed data on tumors. Many advanced radiation modalities are available, including intensity-modulated radiation therapy, image-guided radiation therapy, and particle therapy. These advances can focus the radiation dose to the target volume precisely within a small margin. Therefore, radiation can be delivered only to tumors at the lowest effective dose to avoid adverse events. Involved-node radiation therapy (INRT), a new method, is now being used to treat malignant lymphomas and is effective as a large-field treatment. However, unsurprisingly, INRT is very difficult to deliver precisely. To overcome these problems, a larger treatment field has been proposed. This technique is called involved site radiation therapy (ISRT).

Historically, radiation therapy was the mainstay of malignant lymphoma treatment, as mentioned above. Specifically, the treatment of extranodal lymphomas was

in the hands of radiation oncologists. Extranodal lymphomas have specific characteristics involving their histopathology, lymphomagenesis, and clinical course, which are limited to the site from which the tumors arise. Many extranodal lymphomas are retained in the original organ and are radiosensitive or relatively radiosensitive. Diffuse large B-cell lymphomas that originate from the central nervous system (CNS) show a very different clinical course to that of histologically similar lymphomas arising from nodal regions. Lymphomas arising from one paired organ, such as mucosa-associated lymphoid tissue (MALT) lymphomas in the conjunctiva and testicular diffuse large B-cell lymphomas, tend to relapse in the opposing site. Testicular lymphomas also have a tendency to recur in the CNS.

Although such extranodal lymphomas are most often treated by hematological oncologists, radiation therapy still plays an important role. For example, MALT lymphoma arising from the conjunctiva is easily treated and can be cured by radiation therapy without any other treatment. Gastric MALT lymphomas and duodenal low-grade lymphomas can also be cured solely by radiation therapy. Furthermore, we radiation oncologists are highly experienced in the treatment of extranodal lymphomas. These diseases are relatively rare and thus our younger colleagues in radiation oncology and hematological oncology have little experience with respect to this treatment.

Because radiation is the single most effective agent for the treatment of malignant diseases, it is important to combine this treatment with chemotherapeutic agents. Therefore, new guidelines for the treatment of extranodal lymphomas using ISRT have been proposed by the International Lymphoma Radiation Oncology Group (ILROG). However, although these guidelines are very informative, some ambiguities remain.

The purpose of this book is to specify these issues and to transfer our legacy of knowledge regarding the treatment of extranodal lymphomas to younger investigators and physicians with less experience.

Although these diseases are rare, there are many patients in Japan with nasal natural-killer (NK)/T cell lymphomas, HIV-unrelated CNS lymphomas, and duodenal low-grade lymphomas. Specialists in the treatment of extranodal lymphoma produced this book, which provides substantial information on the treatment of these diseases. We also outline standard treatments for lymphomas arising from other extranodal organs. We believe that this book will help readers to learn more about extranodal lymphomas and to improve their treatment of these diseases.

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Contents

1 Primary Central Nervous System Lymphomas	1
Natsuo Oya	
2 Ocular Adnexal Lymphoma	15
Yasuo Ejima	
3 Extranodal NK/T Cell Lymphoma, Nasal Type	29
Masahiko Oguchi	
4 Thyroid Lymphoma	39
Masatoshi Hasegawa and Nobuhide Wakai	
5 Pyothorax-Associated Lymphoma	45
Jun Itami	
6 Stomach	55
Koichi Isobe	
7 Intestinal Lymphomas	69
Alisa Harada and Masahiko Oguchi	
8 Primary Testicular Lymphoma	77
Keisuke Sasai	
9 Cutaneous Lymphomas	89
Naoto Shikama and Kazunari Miyazawa	