Intraoperative Radiation Therapy

INTRAOPERATIVE RADIATION THERAPY

Proceedings of the Third International Symposium on Intraoperative Radiation Therapy

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PREFACE

The advent of megavoltage radiotherapy made it possible to deliver a sufficient dose to deep-seated tumors. However, a cancericidal dose of external beam irradiation cannot be given if the tumors are located near radiosensitive critical structures. On the other hand, in surgery, the possibility always exists that microscopic lesions will be left behind, even after what is believed to be a curative operation. To overcome these limitations of radiotherapy and surgery, intraoperative radiation therapy (IORT) was developed. The benefit of IORT results from direct visualization of the site to be irradiated and physical removal of potentially dose-limiting normal tissues from the field. IORT has opened the way to new treatment of radioresistant or unresectable tumors. This new form of radiotherapy has also widened the scope of radiotherapy by permitting curative treatment of radioresistant tumors without affecting normal structures.

Because of the encouraging results obtained through IORT, its use has spread in Japan and the number of institutions where this radiotherapy is performed has continued to increase, to a total of 61 in 1990. To date, about 3,500 patients have been treated with IORT. It has spread in the United States, Europe, and Asia. The number of papers on IORT has increased markedly since 1984 and a total of about 100 papers were published in international journals in 1988.

Because of the increasing enthusiasm for IORT, the first international symposium was organized by R. R. Dobelbower in Ohio in 1986. At this meeting 38 papers were presented. The second symposium was organized by E. Bodner, K. Glaser, and H. Frommhold in Innsbruck in 1988 and 93 papers were presented.

The Third International Symposium on Intraoperative Radiation Therapy was held in Kyoto, Japan from November 12 to 15, 1990. The purpose of this symposium was to provide an update on IORT, the state of the art,

and to discuss recent fundamental and clinical results in IORT from the viewpoints of biology, physics, engineering, and clinical medicine.

This symposium brought together about 300 active scientists, medical doctors, and engineers from 21 countries and 170 papers were presented. It is my hope that this book will serve as a comprehensive reference for institutions planning to perform IORT and to give those who are interested in IORT updated information on this field.

I would like to thank all the authors for their contributions. I would also like to express my sincere gratitude to the foundations and many Japanese companies which have financially supported this symposium.

Mitsuyuki Abe, M.D.
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Symposium on Intraoperative Radiation Therapy

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