FOREWORD

Metastasis is an inherent characteristic of malignant tumors and designates the dissemination of cancer cells in the body with formation of secondary tumors at distant sites. Hematogenous metastasis marks the latest stage of tumor progression and in many cases is associated with poor clinical outcome. The biological mechanism of tumor metastasis is complex and requires several steps. Cancer cells have to infiltrate blood vessels or lymphatics, detach from the primary tumor, float to the next microcirculation, emigrate the vessel and proliferate in order to produce new tumor mass. This cellular behavior requires tight regulation on genetic and epigenetic levels that may vary from tumor to tumor due to heterogeneous genetic backgrounds but also activates conserved cellular pathways that are shared among different cancer entities.

In this book, the authors cover several important clinical and biological aspects of cancer metastasis while at the same time highlighting different tumor entities. Updates are given on molecular imaging of metastases, treatment of early and late-stage patients, genetic tumor evolution, the tumor microenvironment, micro RNAs, the role of endothelial cells, and side effects of treating metastatic tumors. Furthermore, DNA damage repair and apoptosis are revisited in this context. Frequent, aggressive but also rare cancer entities are covered, such as lung cancer, gynecological cancer, prostate cancer, and Ewing sarcoma. This gives the reader a refreshing and up-to-date overview of several important aspects of cancer metastasis. Importantly, it also stresses the importance of identifying novel therapeutic strategies to inhibit tumor metastasis for better patient care.

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