Soft Tissue Sarcomas
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A Pattern-Based Approach to Diagnosis

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This book is dedicated to my beloved family:
To my wife, Antonella; to my daughters, Virginia and Irene; and to Kimi
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Preface

Soft tissue tumors represent one of the most challenging fields of oncologic diagnostic pathology. Pathologic diagnosis is the result of a complex combination of morphologic observation, immunohistochemistry, and molecular genetics. A major factor hampering diagnostic accuracy is represented by rarity. As overall sarcoma incidence is fewer than 6 cases/100,000/year, to achieve sufficient diagnostic expertise is unavoidably difficult. Mesenchymal neoplasms are also affected by intrinsic challenges. For example, they often tend to deviate from the classic criteria of malignancy that are applicable to epithelial tumors. Mitotic activity, hypercellularity, and even nuclear pleomorphism do not necessarily equate to malignancy when dealing with a soft tissue tumor. As a consequence, whatever the latitude, published data indicate a rate of diagnostic inaccuracy approaching 30%. Proper therapeutic planning in oncology is based on precise pathologic classification; any effort should therefore be made to reduce diagnostic uncertainty.

The aim of this book is to focus on malignant as well as intermediate malignant soft tissue neoplasms underlying the most relevant diagnostic pitfalls. Benign tumors are discussed whenever they pose significant challenges in terms of differential diagnoses. The reader won’t find herein a systematic approach based on “histogenetic” classification. By offering a practical format, I organized the content according to the approach I use in my daily diagnostics. This means considering the shape of the cells, how they organize, and in which background they are set. Of course, diagnostic pathology cannot be framed by rigid rules, and exceptions tend to be numerous. However, a pattern-based approach allows one to narrow significantly the differential diagnoses and to guide rationally the choice of immunostains as well as of molecular tests. Whereas both immunomorphology and molecular genetics are discussed in detail, I sincerely hope that the reader will be able to appreciate the great diagnostic power of microscopic observation. In the era of the explosion of molecular testing, a competent use of this “not at all obsolete” technique still represents an invaluable tool for providing sarcoma patients with the best possible therapeutic option.
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Writing a book certainly represents a significant effort; however, it also represents a unique chance to share ideas, opinions, and experiences with many colleagues.

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I also wish to thank the many friends and colleagues who during the past 25 years have shared with me their most challenging cases. Without them, I would have never been able to build on and strengthen my own diagnostic skills.