Foreword to the Mediastinal Sarcomas Series

Mediastinal sarcomas represent exceedingly rare neoplasms of mesenchymal origin that arise from component tissues of all the mediastinal compartments. Given the variety of tissue types present within the mediastinum, mediastinal sarcomas comprise a heterogenous group of tumors that include many of the traditional sarcoma subtypes identified within the soft tissue at other body sites. These tumors represent <10% of all mediastinal tumors and account for only 1–2% of all soft tissue sarcomas. Given their rarity they may pose a diagnostic problem for surgeons, radiologists, and pathologists. The incidence of primary soft tissue sarcomas within the mediastinum is difficult to determine due to the rare nature of these tumors and the lack of extensive literature on them, however they include a diverse array of different sarcoma subtypes including synovial sarcoma, liposarcoma, malignant peripheral nerve sheath tumor, small round blue cell sarcomas and leiomyosarcoma. Other less common types include an extensive list of lesions such as vascular sarcomas, osteogenic and chondrogenic sarcomas, dendritic cell lesions, chordomas and a variety of sarcomas with uncertain histogenesis such as alveolar soft part sarcoma and undifferentiated pleomorphic sarcoma. The diagnosis of soft tissue sarcomas within the mediastinum relies on histopathological examination with radiological and clinical correlation to rule out other primary sites. Many of these lesions are characterized by recurrent genetic abnormalities that can be identified through a combination of ancillary testing such as immunohistochemistry, karyotyping and fluorescent in-situ hybridization. In addition, newer molecular techniques including a variety of PCR-based assays and massively parallel sequencing assays, particularly ones that evaluate for the characteristic rearrangements associated with many sarcomas, allow for more specific diagnosis of these lesions when they arise in such an unusual location. This special series of Mediastinum attempts to provide multiple concise review articles written by experts with special interest in the topic discussing some of the more common as well as less common mediastinal sarcomas in an attempt to provide an up to date discussion and broad overview of mediastinal sarcomas. In addition to the histopathology, clinical and radiological features will be presented and discussed. An overview of the role of molecular genetic mechanisms underlying the many types of soft tissue sarcomas that occur within the mediastinum is provided. We hope that these articles will be helpful to those practicing physicians who encounter these rare lesions.

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