

Soft Tissue Sarcoma

Opening the Door to Advances in Diagnosis and Treatment

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The article by Bergh et al.¹ in this issue of *Cancer* contains important new insights that improve our understanding of sarcoma and clearly identify the pathways of future investigations and the future of sarcoma management.

In this publication, the investigators clearly distinguish a subgroup of patients with a better prognosis—those younger than 25 years with tumors smaller than 5 cm and no histologic evidence of a poorly differentiated tumor. The evaluation and treatment of patients with soft tissue sarcoma has been plagued by the scarcity of the condition; the variety of presentations in anatomic site, size, and histologic grade; and the multiplicity of physicians typically involved in the care of these patients.² While advances in the survival of patients with bone sarcoma, an even rarer disease, have been dramatic, similar advances in the prognosis and treatment of patients with soft tissue sarcoma have been more modest. The identification of subgroups of patients with better or worse prognoses within the diverse group of patients with soft tissue sarcoma, such as has been accomplished by these investigators, will help direct clinical trials in which more aggressive therapies are given to patients with worse expected outcomes.

Evaluation of soft tissue sarcomas historically relied on light microscopy only. Controversy existed, indeed, even regarding the possibility of low grade variants of this malignancy; some pathologists were of the opinion that all synovial sarcomas were by their very nature high grade.³ With the identification of certain histologic features that are indicative of better prognosis, Bergh et al. help lay to rest that notion.

However, the future of diagnosis of these tumors will be the application of contemporary molecular techniques of diagnosis, with less reliance on pattern recognition. Synovial sarcomas express gene products that are clearly identifiable by contemporary techniques and have been shown to correlate with prognosis.⁴ In multivariate analysis, the type of SYT-SSX fusion transcript was the sole independent prognostic factor for metastasis free survival in localized tumors. Patients with tumors positive for SYT-SSX2 have a low risk of early relapse. Different fusion products generated by cytogenetically identical translocations (such as X:18 in synovial sarcoma) can have major clinical correlates, such as the initial demonstration of the Philadel-

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phia chromosome, or BCR-ABL rearrangement, or the EWS-FLI1 fusion transcript as a prognostic factor in the Ewing family of tumors. Future investigations of the prognoses and treatment of patients with synovial sarcomas and other soft tissue sarcomas will benefit from the application of molecular techniques.

Finally, the authors identify treatment outside of a referral center as an independent risk factor for local recurrence. Only with the widespread recognition of the potentially lethal outcome, the necessity of multidisciplinary collaboration, and the need to have sarcomas treated by those thoroughly experienced in their care will patients be optimally managed.

The future of sarcoma management holds many opportunities with the identification of subgroups of patients with favorable prognoses, the application of

contemporary molecular techniques to their diagnosis, and the development of centers with both basic scientists and clinicians who are dedicated to advancing the understanding of these diseases.

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