CORRESPONDENCE

The Diagnosis and Treatment of Soft Tissue Sarcomas of the Limbs

by PD Dr. med. Holger Bannasch, Dr. med. Steffen U. Eisenhardt, Prof. Dr. med. Anca-Ligia Grosu, Dr. med. Jürgen Heinz, Dr. Arash Momeni, Prof. Dr. med. G. Björn Stark in volume 3/2011

Adjuvant Radiotherapy

We thank the authors for their excellent review article. However, it is only of limited value in terms of an oncologically correct approach for specialist physicians in private practice. The authors describe in their article that after magnetic resonance tomography-aided planning, a primary R0 situation can mostly be achieved and reconstruction can be performed simultaneously. According to what we know, in case of high-grade sarcomas that are located deep within the tissue, even maximum planning and using microsurgical methods, positive resection margins cannot be avoided with any degree of certainty unless one is willing to accept primarily functional damage. Especially where the tumor has infiltrated large nerves or blood vessels, adjuvant measures should be taken to enable local control. We are surprised that extensive reconstruction is performed before the histopathological results have become available. This does not seem helpful, especially with regard to morbidity associated with the harvesting of flap grafts.

Liberal use of radiotherapy in high-grade sarcomas and R2 resected low-grade sarcomas can be recommended. In a Scandinavian cohort of patients with 1093 soft-tissue sarcomas, additional adjuvant/additive radiotherapy in high-grade sarcomas resulted in an improved local control rate, for any combination of location and resection status. Even patients with marginal or R2 resected subfascial low-grade sarcomas benefited from radiotherapy (1). In the meantime, two large epidemiological studies have been published that show a survival advantage due to adjuvant radiotherapy. In the analysis of 8249 sarcoma patients, surgery and radiotherapy were the therapeutic modalities that improved the survival rate significantly, independently of one another (2). This was not found for chemotherapy (2). The publication on chemotherapy with hyperthermia, which is now available as a full-text publication, did not show any advantage for soft-tissue sarcomas of the extremities (disease-free survival and overall survival) (3).

In conclusion: Each patient with an unspecified soft-tissue tumor that cannot be declared a lipoma with complete certainty should be referred for diagnostic evaluation and further treatment to a center or a surgeon with experience in oncological orthopedic surgery.

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Inadequate Initial Resection

It is useful and important for an article to try to shed a new light on a situation and thus provide interested physicians with new insights. However, the article cannot be accepted as a guide in all its aspects.

The authors recommend excision biopsy without further preoperative imaging for small tumors that according to clinical examination are definitely localized in the epifascial plane. Narrow marginal resection is sufficient, in their opinion. A sarcoma diagnosis that comes as a surprise is not rare, especially when the method the authors described in their article is used. Residual tumor cells in the resection margin are detected in up to 60% of patients. Since the resection status is an important prognostic factor for local tumor control and overall survival, even small tumors in the epifascial plane will have to be assumed to be malignant until the opposite has been confirmed and will have to be resected (1), if a sarcoma cannot be entirely excluded on imaging. In a center for musculoskeletal tumor surgery, radiological expertise is available, which helps in approaching a diagnosis by using high-resolution MRI scanning. The central issue is not the administration of contrast medium but how the examination is performed according to a standard protocol (suitable sequences; recommendations from the working group for musculoskeletal radiology in the German Society of Radiology).

From the radiotherapist's perspective, narrow resection without preoperative imaging is not acceptable. If the tumor if confirmed as a high-grade sarcoma on histology, preoperative radiotherapy is indicated. If no diagnostic imaging procedures were undertaken before the surgery then a basis for defining the target volume is lacking. In order to achieve a high probability of local control, the radio-oncologist is rather likely to choose a more generous safety margin around the presumed tumor bed, in association with a high toxicity rate (which is unnecessary).

For specialist physicians in private practice, we wish to reiterate that any soft-tissue tumor should be considered as potentially malignant unless it has been confirmed to be benign, and that it is best to diagnose and treat such tumors in a tumor center.

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In Reply:

We thank our correspondents for their valuable comments. Both letters re-emphasize the importance of the interplay between clinical diagnostic evaluation and imaging diagnostics of soft-tissue tumors as well as the necessity of multimodal treatment in centers.

Rudert, Holzapfel, and Jakubietz rightly question the rationale behind simultaneous reconstruction, which we perform in our center. We wish to make a differentiation here:

A consecutive approach makes sense for tumor localizations where temporary wound coverage and a mostly uninterrupted work-up of the resection margin are possible—for example, on the scalp, if complex reconstruction with local transposition flaps is planned. In an R1 situation, technically simple repeat resection would not be possible, and the elaborate reconstruction would have to be sacrificed.

Generous resection of the extremities distally to the knees and elbows often results in very large defects with several sensitive structures lying exposed. These can mostly not be vacuum-sealed for the duration of the histopathological work-up of the specimens (the sheer size of the specimens means anyway that genuinely uninterrupted work-up of the resection margin is not actually possible). Simultaneous reconstruction with large flap grafts has proved useful in this setting, but we wish to underline again that radical resections that spare the extremities can often only be done thanks to reconstructive procedures (1). R1 situations at the resection margin are rare in this setting; an R1 situation deeper within the tissue will sometimes have to be treated by lifting the flap and repeated resection—if required, in combination with intraoperative radiotherapy. This does not, however, result in a loss of the reconstruction (2).

Rechl, Röper, and Wörtler point out again that any soft-tissue tumor will have to be regarded as malignant until it has been proved to be benign. They request magnetic resonance imaging for every soft-tissue tumor, as well as asking for treatment at a center. This is unfortunately impracticable.

Small tumors that have been in situ for a long time and are sonographically confirmed to be epifascial (that is, subcutaneous) can be removed (even outside specialist centers) by excision biopsy. If histopathological analysis then confirms a sarcoma, a wide further resection will have to be performed in the context of a multimodal therapeutic approach. For epifascial tumors, repeated resection is mostly unproblematic for surgeons specializing in all oncoplastic options and does not affect the prognosis negatively.

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Conflict of interest statement
All authors declare that no conflict of interest exists.