Correspondence

Centralization of bone and soft tissue tumors

To the Editor:

In bone sarcomas the 5 years continuously disease-free survival has improved dramatically in the last 15 years. For osteosarcoma, for example, it has changed from 10–20 to over 60 percent; for Ewing's sarcoma in adults, there are less precise figures, but it is likely that improvements have occurred with better surgical techniques. In tumors of childhood and adolescence, survival has also improved greatly.

The best results are obtained with a multidisciplinary approach, which is only possible in centers with the highly specialised surgical and medical skills.

Diagnosis

A sound diagnosis must rely on pathologists specialized and expert in musculoskeletal oncology.

Staging

Appropriate treatment depends on thorough staging based upon clinical findings, radiography, isotope scan, CT scan, angiography, NMR, and histology.

The biopsy should usually be carried out after the imaging study has been completed. If done before, it can obscure subsequent staging.

Biopsy

This can be performed by fine needle, by trocar, by traditional incisional biopsy, or intraoperatively by frozen sections.

The choice of biopsy technique essentially depends in each case on the clinical and radiologic features and on the planned treatment. A misplaced or incorrect biopsy can cause hematoma, contamination of anatomic compartments, and infection. Such a biopsy may lead to more difficult surgery, complications, or unnecessary amputation.

An excisional biopsy of a malignant tumor precludes any subsequent sound treatment except amputation, and increases the risk of local recurrence. Biopsy should be performed at institutions that are ready and experienced to manage the problem in all its aspects irrespective of the diagnosis established.

Surgical treatment

Any marginal procedure in a malignant tumor (i.e., removing the tumor by dissecting between its pseudocapsule and the surrounding tissues) is accompanied by a high incidence of local recurrence. Local recurrence increases the risk of systemic metastases and often results in failure of management without amputation.

The surgeon must always aim at wide surgical margins (i.e., with a thick cuff of normal tissue enveloping the entire surface of the tumor) or radical (compartmental) margins (i.e., removing the entire anatomic compartment harboring the tumor). Those margins can be obtained either by conservative surgery or by amputation. Such surgery cannot be planned without a previous staging of the tumor. Conservative surgery becomes hazardous or impossible after a wrong incisional biopsy, or an excisional biopsy.

Chemotherapy

Chemotherapy is indispensable in the majority of many high-grade sarcomas, but should be regarded as investigational in all cases. It can be used preoperatively and/or postoperatively.

It should be used following exact protocols, especially those designed to assess important therapeutic problems. Chemotherapy should be carried out in centres specialized to cope with such intensive and potentially dangerous treatments.

Radiotherapy

This remains an essential part of treatment in Ewing's sarcoma, lymphoma, and rhabdomyosarcoma, in combination with surgery and/or chemotherapy. The radiotherapist should work in close collaboration with the other specialists of the bone and soft tissue tumor group.

Recommendations

1. We recommend that all patients with a suspected malignant bone or soft tissue tumor are referred to tumor centers, preferably without prior biopsy.

2. We urge that in each country the number and quality of such centers is increased to cope with the needs of the population.

European Musculoskeletal Oncology Society

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To the Editor:

The European Musculo-Skeletal Oncology Society, EMSOS, was founded in 1987 on the initiative of Professor Mario Campanacci, Rizzoli Institute, Bologna, Italy. The aims of the Society are "to advance the science and practice of the diagnosis and treatment of bone and soft-tissue tumors, to promote basic and clinical research, and to disseminate knowledge in order to provide a common high standard of musculo-skeletal oncology."

Clearly, the treatment of bone and soft-tissue tumors has improved over the last 10–15 years. Several factors are involved in this development. Preoperative planning has become precise with the aid of scintigraphy, computed tomography, and magnetic resonance technology. A system of surgical staging has been defined. The histopathologic malignancy grading has become refined, and the estimated aggressiveness of the tumor in combination with the surgical staging now makes differentiated surgery possible. Limb-saving surgery has, to a great extent, become the preferred treatment at the expense of ablative surgery, also due to the development of endoprostheses. Further, adjuvant treatment such as chemotherapy, particularly for certain bone-tumors, increases long-term survival. Hence, it is obvious that patients with bone and soft-tissue tumors will need a specialized and experienced team for proper diagnosis and treatment.

With the inception of the Scandinavian Sarcoma Group in 1979, management of sarcoma patients has been centralized to a few orthopedic oncology groups in each country. The number of patients referred has steadily increased. Centralization of patients with skeletal sarcomas has been easy for two reasons: (1) these patients have traditionally been treated at major orthopedic departments, and (2) conventional radiography provides in most cases a diagnosis of malignancy. Almost all the patients with skeletal sarcomas are referred before any surgery. By contrast, patients with soft-tissue sarcomas were often referred only after surgery, most often after marginal excision; malignancy was often not suspected preoperatively. The false preoperative diagnosis of benign tumor, most often lipoma, is easily understood considering the epidemiology of soft-tissue lesions; the ratio of benign to malignant tumors is 200–300:1. The clinician who classifies every soft-tissue tumor as benign makes a correct diagnosis in well over 99 percent of his patients! Based on epidemiologic data on benign and malignant soft-tissue tumors, the following simple guidelines for referral were recommended by the Scandinavian Sarcoma Group in 1983.

Refer before surgery patients with soft-tissue lesions that satisfy any of these three criteria:

1. Larger than 5 cm.
2. Deep-seated.
3. Otherwise suspected of malignancy.

These recommendations have led to an increased number of patients being referred before surgery; the Southern Swedish Tumor Center gets nine tenths of all the patients with deep-seated soft-tissue sarcomas referred before surgery. For every sarcoma patient, 10 patients with benign tumors, suspected of malignancy, are referred. This is the cost of getting the majority of the sarcoma patients before surgery. However, the benign diagnosis is arrived at in most of these patients by one ambulatory examination at the center, including fine-needle aspiration cytology.

The Scandinavian Sarcoma Group has elaborated several multicenter projects for the diagnosis and treatment of bone and soft-tissue tumors. Our experience supports the aims expressed by EMSOS, which should be taken into serious consideration.

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Reference The Scandinavian Sarcoma Group: Ten Years' Experience. Acta Onc 1989;28(Suppl 2).