SUMMARY

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Although musculoskeletal tumors are rare, they constitute an important problem in diagnosis, treatment and follow up.

The most important initial step in the management of musculoskeletal tumors is an accurate diagnosis. The age of the patient, the site of involvement, signs and symptoms, radiological and laboratory findings are often paramount in establishing a firm diagnosis.

If the history and clinical examination are deficient, if the roentgenograms are of inferior quality or badly interpreted, if biopsies are poorly prepared and the histologic opinion is not expert, then an accurate diagnosis is seldom made.

Once the diagnosis is established, the surgeon must call upon his collegues in radiology, pathology, radiation therapy, and oncology for help by reviewing the data obtained in the staging procedure and reaching a management scheme.

Up till now, there is no universal agreement about classification of musculoskeletal tumors. The tissue of origin and the behavioral pattern, supplemented by a histological description, form the basis of the present classification recommended by the W. H. O.

Diagnostic imaging procedures used in diagnosis of musculoskeletal tumors include conventional radiography, xeroradiography , skeletal scintigraphy, conventional tomography, peripheral angiography, computed axial tomography, and nuclear magnetic resonance.

Analysis of nuclear DNA content by flow cytometry is of a great help in the assessment of the degree of malignancy of the tumor. Tumor markers are valuable in the early detection and follow up of bone metastases.

Biopsy in musculoskeletal tumors is either needle biopsy, incisional biopsy or excisional biopsy. Biopsy is sent for histopathological and bacteriological examination to exclude the possibility of infection.

Benign bone tumors are characterized radiologically by bone expansion, border of host bone sclerosis, and well delineated margin. On the other hand, primary malignant bone tumors are characterized radiologically by being lytic lesions with ill defined margins either focal destruction of the cortex, moth eaten or hazy margin. Incisional biopsy is usually required to establish the diagnosis. Malignant bone tumors are generally of poor prognosis.

Benign soft tissue tumors are usually well defined, superficial to deep fascia and less than 5 cm in greatest diameter, while malignant soft tissue tumors are usually deep to deep fascia and more than

5 cm in greatest diameter. Thermography is helpful in the differentiation between benign soft tissue tumors and aggressive soft tissue lesions ; either malignant tumors or inflammatory conditions. If the temperature of the affected site is higher by less than 0. 7°C. Compared to the contralateral side of the body, the lesion is benign soft tissue tumor, while if the temperature of that site is higher by more than 0. 7°C compared to the contralateral side of the body, then the lesion is an aggressive one.

The method of treatment of a patient with a musculoskeletal tumor will depend mainly on whether the tumor is bone tumor or soft tissue tumor and whether it is benign or malignant.

Benign bone tumors are usually treated by surgical removal and autogenous bone grafting. Benign soft tissue tumors are treated by surgical removal.

Treatment of malignant tumors either of bone or soft tissue will depend on the age of the patient, cell of origin of the tumor, site, extent, degree of malignancy, multiplicity of the tumor, presence or absence of metastasis, general condition of the patient, feasibility of the tumor to surgical interference and the available methods of treatment.

Surgical margins include intralesional, marginal, wide and radical margin. Based on surgical margins, eight surgical procedures

are well known. These are: intralesional curettage or debulking , marginal excision, wide local excision, radical local resection, intralesional amputation, marginal amputation, wide amputation and radical disarticulation.

The major purposes of radiation therapy as a treatment modality are either to eradicate residual localised tumor or to help shrinkage of a tumor to provide a better surgical approach.

Radiotherapy should not be considered as an alternative to surgery.

Adjuvant chemotherapy is usually used in the form of multidrug regimen.

The second half of the twentieth century is called the age of computers. Just as industrial revolution freed man from the physical weariness of heavy manual labour through the use of machines, the present revolution freed man from the weariness of mental labour through the use of computers.

The computer program of diagnosis and management of musculoskeletal tumors imitates the usual steps followed by the average orthopaedic surgeon. It is of great importance in helping the orthopaedic surgeon to reach a correct diagnosis without much mental effort, going through a correct way of treatment especially for those