

tors were as follows : high dose of CTX, additive troubles due to MTX and/or ADR, and/or Ara C, repetitive courses of CT, and malnutrition.

These enzymatic abnormalities support the need for using routinely restrictive diet and, in high-risk CT, parenteral nutrition.

50.

PRIMARY OSTEOGENIC SARCOMA OF THE EXTREMITY: EIGHT-YEAR EXPERIENCE WITH ADJUVANT CHEMOTHERAPY. G.Rosen, B.Caparros, A.Nirenberg, A.Cacavio, A.G.Huvos, J.M.Lane, R.C.Marcove. Memorial Sloan-Kettering Cancer Center, New York, New York, U.S.A.

Since October 1973, 198 patients 21 years of age or younger with histologically high grade osteogenic sarcoma of an extremity were treated with adjuvant chemotherapy. Twenty-five of the first 52 patients treated on the T-4 protocol have remained free of disease at a median of 7½ years. In the next chemotherapy protocol (T-7) most patients had chemotherapy prior to amputation or resection during which time the dose of high dose methotrexate was escalated in many patients to that needed to shrink the primary tumor. At a median of 4½ years, 43 of 54 patients (80%) have remained continuously free of disease. In the current protocol (T-10) the response of the primary tumor to chemotherapy with high dose methotrexate was used to select postoperative adjuvant chemotherapy for the patient. With the latter approach 84 of 92 patients (91%) have remained continuously free of disease at a median of 2½ years. This experience demonstrates the value of chemotherapy in increasing the cure rate in osteogenic sarcoma, and that the response to pre-operative chemotherapy can help select postoperative chemotherapy as was done on the T-10 protocol to result in an even higher potential cure rate for osteogenic sarcoma.

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51.

OUR EXPERIENCE ON THE EFFECT OF CHEMOTHERAPY ON PRIMARY OSTEOSARCOMA. M. Brunat-Mentigny, P. Noel, T. Philip, L.M. Patricot, J.C. Vanzelle. Centre Léon Bérard - Service de Pédiatrie. Lyon - FRANCE.

17 patients with an osteogenic sarcoma have been treated by Rosen's T, chemotherapeutic regimen i.e. Actinomycin D, Bleomycin, Cytosine then high dose Methotrexate + Leucovorin rescue then Adriamycin then high dose Methotrexate, for 2 months.

Histology after this treatment had been checked either by biopsies or examination of the operative specimen (amputation or resection).

In 4 cases chemotherapy seemed to have had no effect at all. 2 patients have lung metastases 12 and 18 months after. 2 are recent cases.

In 3 cases there was an effect of chemotherapy but small and tumor was present and seemed viable. One has lung metastases and 2 are recent cases.

In 5 cases there was residual sarcoma but tumor covered less than 25 % of the slide. 3 are alive and well 29 months⁺ 24 months⁺ and 21 months⁺ 2 are recent cases.

In 5 cases we found no tumor at all (4 amputations, one resection), 4 patients are alive and well 27 months⁺ 24 months⁺ 27 months⁺ 18 months⁺. One is dead probably from toxicity of chemotherapy.

7/17 patients had no or small effect and 10/17 patients had a very good effect of chemotherapy.

52.

CHECKING OF LOCAL CONTROL AFTER CONSERVATIVE TREATMENT OF MALIGNANT BONE TUMORS : RESECTION FOLLOWED BY VASCULARIZED BONE AUTOGRAFT. JP Métaizeau¹, D. Olive², P. Bey³, P. Bordignon², F. Plénat⁴, J. Prévot¹ - 1. Service de Chirurgie Infantile, CHU - 2. Service de Pédiatrie "A", CHU, 3. Centre Alexis Vautrin, VANDOEUVRE LES NANCY, 4. Laboratoire d'Anatomie Pathologique, VANDOEUVRE LES NANCY.

After conservative treatment of malignant bone tumors, the local control remains uncertain. The worrying radiological aspect of the irradiated tumor and/or fracture occurrence at this site may fear a relapse of the tumor.

The resection of the whole involved bone is the best way to check the local control. But the extent of the bone defect and the bad local conditions due to irradiation make the reconstruction hazardous.

In two patients (one femoral Ewing's sarcoma and one humeral osteogenic sarcoma) the authors, using a free vascularized fibular graft for reconstruction have obtained the consolidation of the limb after resection of the irradiated tumoral site, without compromising its function. Encouraging results obtained allow us to propose this conservative attitude as primary treatment of specific malignant bone tumours.

53.

A LIMB SAVING OPERATION (TIKHOFF LINBERG) FOR MALIGNANT BONE TUMORS OF THE SHOULDER. CASE REPORTS & FUNCTIONAL RESULTS IN 2 CHILDREN. J. Plaschkes (1), P. Imbach (2), A. Bleher (3), B. Rao (4), M. Bettex (5)

Amputation or exarticulation has usually been the mainstay of treatment for osteogenic sarcoma. In proximal involvement of the arm or shoulder, a better alternative in selected cases is a localized limb saving resection with or without internal prosthetic replacement - the so called Tikhoff-Linberg procedure.

This gives very good functional results and in combination with chemotherapy equally good survival results.

2 children with this type of operation are presented:

One, a 13 year old boy with osteogenic sarcoma of the proximal humerus and another 14 year old boy with Ewing Sarcoma of the scapula.

Both had preoperative chemotherapy. The child with the sarcoma of the scapula also had local radiation but there was still biopsy proven residual tumor after this therapy. In both it is more than one and a half years since operation. They are disease free and have very good functional use of the hand and forearm.

A short video-tape of the operation and functional results is available.

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54.

A FUNCTIONAL KINETIC STUDY OF OSTEOGENIC SARCOMAS AND ITS IMPORTANCE IN THEIR CLASSIFICATION. A.Mazabraud, R.Gongora G.Gongora, B.Perdereau, J.M.Zucker, J.P.Bataini. Institut Curie, Section Médicale, Paris, France.

A simple biopsy, the size of which is of course restricted, cannot permit us to evaluate the differentiation of the tumor as a whole given the polymorphism of osteogenic sarcomas. Thus it has proven necessary to carry out a test the result of which would provide an overall picture of the functional value of the tumor.

For the past ten years we have been using 85 Sr since its metabolism is similar to that of Calcium and also because its radioactivity permits external measurements.

The results are expressed in terms of the ratio between the tumoral zone and the reference zone. This particular test has shown that osteogenic sarcomas subdivide into 3 groups which can in turn be individualized either by the ratio R8 on the 8th day or by the difference R8-R1 representing the average curve between the first and last days of measurements.

In comparing the results with the histological aspect, it appeared evident that sarcomas with a descending curve (type 3) represent those termed "high risk sarcomas" (i.e. anaplastic and telangiectatic sarcomas as well as a certain number of very slightly osteogenic sarcomas which are histologically classified as being of a common type).

The sarcomas displaying an ascending curve (1 and 2) have a more favorable prognosis.

The diagnosis of the sarcoma being established histologically this test is of great importance in that it permits us to recognize high-risk sarcomas and consequently permits them to be equally distributed among the various arms of a therapeutic trial.