risk of melanoma metastasizing to the regional SNs is proportionally related to Breslow's thickness of primary tumor: as tumor thickness increased, so did the rate of SNs involvement.

However, sentinel lymph node biopsy requires further research.

Soft tissue and bone tumours

300 POSTER

Ewing tumor as second malignancy-the EI(CESS)-experience

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Purpose: Ewing Tumors (ET) have only occasionally been described as second malignancies. Associations of a second ET (sET) to the entity/site of the primary malignancy (pM), to genetic predispositions and to previous treatment remain speculative.

Patients and Methods: The database of the EI(CESS) and the ongoing Euro-Ewing99 trials was searched for patients with sET. The incidence of sET in comparison to pET was compiled, survival analyses were performed and outcome of sET is compared to outcome of pET.

Results: 15/1778 registered patients with sET were identified, with a median age at pM of 6.9y, of sET 17.4y, median time interval to sET was 7.1y. 9/15 patients were < 15y at diagnosis of pM. An estimated annual risk for childhood cancer patients to develop sET of approx. 2,3/105/y is calculated. Considering the heterogeneity of pM in the reported childhood cancer patients (ALL n=3, retinoblastoma (RB) n=2, NHL n=1 osteosarcoma (OS) n=1 RMS n=1), unilateral RB with typical deletion (13q14) is overrepresented (2/9), especially in view of the low relative frequency of primary RB. 5/15 sET developed within the previous irradiated region (n=3 > 40 Gy, n=2 12 Gy) after a median time interval of 7.1y.There was no obvious impact of pM chemotherapy (11/15 pts on various regimens) on the occurrence of sET. The characteristics and the outcome of sET after a median observation time of 34 months are similar to the data in pET.

Conclusion: The cumulative risk for sET is lower than for secondary OS (0,045% vs. 0,15%). Unilateral RB as pM are disproportionaly frequent. Germline mutations were only observed in RB. Radiotherapy may also contribute to the risk of developing not only sOS but sET as post-irradiation sarcomas. The time interval between first and second malignancy is similar to the period reported in other second sarcomas. The prognosis of sET is comparable to pET as long as appropriate chemotherapy is applied.

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301 POSTER

A biopsy of a suspected soft tissue sarcoma in the retroperitoneal space; the diagnostic yield and the risk of contamination of the different procedures

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Purpose: A biopsy is important to clarify the nature of a retroperitoneal mass, but its value in case of a suspected retroperitoneal soft tissue sarcoma (RSTS) is unclear. The diagnostic accuracy and the influence on the occurrence of local tumour spread of the different biopsy procedures was assessed.

Methods: Data were collected on 143 patients (64 males and 79 females, median age 60 years) in the Netherlands in whom a RSTS was confirmed histologically between 1-1-1989 and 1-1-1994. Biopsies were done during clinical work-up in 85 patients (59%), and in them the yield was assessed of fine-needle aspiration (FNA), core needle biopsy (CNB), and surgical biopsy (SB). The risk of developing local tumour spread was evaluated by comparison of the biopsied patients to those who had no biopsies prior to surgery (n=58).

Results: A total number of 122 biopsies was performed: FNA (n=46), CNB (n=61), and SB (n=25). The proportion of affirmative biopsies was 22% for FNA, 54% for CNB, and 72% for SB (FNA vs. CNB, p=0.001; FNA vs. SB, p<0.001; CNB vs. SB, p=ns). At the time of surgical treatment (n=123), no significant differences in the presence of local tumour spread were seen following preoperative SB (4/16=25%), needle biopsies (8/49=16%), or when preoperative biopsies weren't taken (11/58=19%; p=0.74). Following complete tumour resection (n=78), no significant differences were seen in 5-year local disease free proportional survival (SB, 50%; needle biopsy, 52%, no biopsy, 45%; p=0.91).

Conclusion: The yield of a biopsy in case of a RSTS was limited for all three techniques, being lowest for FNA. No effect of needle and open surgical biopsies was found on the occurrence of locoregional tumour spread.

302 POSTER

Prognostic value of initial management in localized osteosarcoma. A monocentric retrospective analysis

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Introduction: Many reports attempt to identify the factors which may affect the prognosis in osteosarcoma. We wanted to determine whether the technique of biopsy and/or the initial management could be prognostic factors of long term survival.

Patients: 139 patients (88 males and 51 females aged 4–58 years) with localized high grade osteosarcomas of the limbs were treated and/or followed up by our team between 1984 and 1998. 75 first hand patients had the biopsy performed by the surgeon of the team after local evaluation of the tumor and planning of future en bloc resection. The 84 other patients were referred to us after biopsy or/and induction therapy. No significant differences in initial prognostic factors were observed between the two groups.

Method: All patients received preoperative and postoperative chemotherapy according to the current protocols at the time of their treatment.

3 patients (all referred patients) were primarily amputated. All the other were treated by limb salvage even for fractured or huge tumors and in very young patients. All patients were followed up by their surgeon and their chemotherapist every 3 months during 2 years, then every 6 months for 2 other years and yearly thereafter.

Results: With a median follow up of 10 years (maximal 16 - minimal 2) 12 local recurrences were observed: 10/84 (12%) in referred patients and 2/75 (2.6%) in first hand patients. 54% (46/84) of referred patients are alive in complete remission compared to 73% (40/55) of first hand patients (93% for first hand patients treated by our protocols since 1/1986). In multivariate analysis, the difference is significant (p < 0.02)

Conclusion: Initial management by an experimented team is of crucial importance in long term survival of patients with localized high grade osteosarcoma of the limb. When the diagnosis of osteosarcoma can not be excluded on prebiopsy medical imaging of bone tumor, the patient should be referred, before biopsy, to team experimented in bone tumor oncology.

303 POSTER

A phase I/II clinical trial of Carbon-ion therapy for patients with bone and soft tissue sarcomas not suited for surgical resection

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Purpose: To determine the maximum tolerated total dose of that can be delivered by carbon-ion beam irradiation, as defined by the acute toxicity, and to evaluate the effect of carbon-ion beam on the bone and soft tissue sarcomas. This is the first report of carbon-ion treatment of the bone and soft tissue sarcomas.

Methods and Materials: Between April 1996 and February 2000, 64 lesions in 57 patients with the bone and soft tissue sarcomas not suited for surgical resection received carbon-ion treatment. Tumor Sites included mobile spine or para spine in 19 cases, pelvis in 32 cases and extremities in 6. The applied dose was escalated from 52.8 to 73.6GyE(Gray equivalent) in 16 fractions over 4weeks(3.3 to 4.6GyE/fraction). The median tumor size was 559cm3 (range, 20~2290cm3). The minimum follow-up period of the survivors was 15months.

Results: Seven of 17 patients treated with the dose of 73.6GyE experienced RTOG grade3 acute skin reaction. We stopped the dose escalation at this dose level. No other severe reactions (Grade3~) were observed in this series. The 5-year actuarial local control rate for the whole group is 72%. The overall 5-year actuarial survival rate is 46%.

Conclusion: Heavy - ion treatment using carbon-ions appears to be safe and effective in the management of the bone and soft tissue sarcomas not suited for surgical resection, and it will provide better local control and may offer a survival advantage in these patients.