to their original volumes within 16 days. Chemo-hyperthermic treatment of untreated tumours or irradiated tumours at day 16 after irradiation consisted of CDDP (6 mg/kg ip), HT (1 h at 43°C) or CDDP + HT (45 min interval). The experimental endpoint was tumour growth delay (TGD). In untreated tumours CDDP + HT resulted in a significantly larger TGD than CDDP alone (11.6 and 7.4 days respectively, p = 0.0002), while HT alone showed a 1-day TGD. Preliminary results in irradiated tumours indicate that CDDP + HT rendered a similar TGD as in untreated tumours, although the TGD after CDDP + HT was not significantly different from CDDP alone. Our findings show that HT enhances the effectiveness of CDDP in R-1 tumours. Untreated tumours probably respond similar to CDDP + HT as compared to irradiated tumours.

Soft tissue sarcomas

841 PUBLICATION OXYGENATION STATUS IN PRIMARY SQUAMOUS CELL CARCINOMAS OF HEAD AND NECK H. F. Feldmann, D. M. Saamuebel1, Th. Asberger, W. Arnold1, M. Molls Department of Radiation Oncology 1Department of ENT surgery, Technische Universität München, Klinikum rechts der Isar, 81675 München, Germany

45 patients with primary head and neck tumours were investigated pretherapeutically. In 30 patients the tumours were located at the floor of the mouth, the tongue or the tonsil. In those cases PO2 measurements were performed in general anaesthesia during endoscopic procedure. In 15 patients large neck nodes (N2/N3) were investigated pretherapeutically and during split course radiochemotherapy. In general, the median PO2 distribution ranged between 2.4 and 46.6 mmHg and showed marked tumor to tumor heterogeneity. The follow up investigations during split course radiochemotherapy (n = 15) showed a significant increase of the median PO2 after the pause. The observed changes of tumor oxygenation during therapy will be discussed in detail with regard to their clinical relevance.

842 PUBLICATION HYPERTHERMIA-ENHANCED EFFECTIVENESS OF CISPLATIN IN UNTREATED VERSUS IRRADIATED RAT SOLID TUMOURS C. van Bree1, R. C. Rietbroek, J.B.A. Kipp1, P.J.M. Babker2, C.H.N. Vincken1 1Department of Radiotherapy 2Medical Oncology, Academic Medical Centre, PO Box 22700, 1000 DE Amsterdam, The Netherlands

Hyperthermia (HT) enhances cytotoxicity of cisplatin (CDDP). If this enhancement is different in untreated versus irradiated tumours is not known. Therefore this animal study investigates the efficacy of combined CDDP and HT in untreated tumours compared to tumours regrowing after irradiation. Pieces of R-1 rhabdomyosarcoma were subcutaneously implanted in the hind legs of Wag/Ry rats. After irradiation, the tumours regrew repeated every one or two months to adjust the discrepancy in length of both legs.

844 ORAL FIRST CLINICAL EXPERIENCE WITH A GROWING ENDOPROSTHESIS, A LIMB SAVING PROCEDURE IN CHILDREN (FILM—10 MIN) H. Schraffordt Koops, G.J. Verheurts, R.P. Veth, J.R. v. Horn, A. Postma, H.J. Grotenhoober

Univeristy Hospital Groningen, The Netherlands

Purpose of the study: To perform the first clinical study with an extendable endoprosthesys that can be extended non-invasively for children with a malignant bone tumor in the leg.

Method: A 14-year old boy had an osteosarcoma at the distal metaphysis of the femur. The patient was first treated successfully by chemotherapy (cisplatin, doxorubicin, ifosfamide and high dose methotrexate). The operation followed a few weeks after chemotherapy courses. Enough muscle tissue could be preserved. Resection was followed by reconstruction with a new extendable modular endoprosthetic system. The growing endoprosthesys is powered magnetically. An electromagnet, inside the leg, produces a magnetic field that causes rotation of a small permanent magnet in the prosthesis. The magnet drives a motion screw via a gearbox. When the motion screw rotates the inner and outer tube of the prosthesis are forced apart.

Results: Seven months after the operation there was a leg length discrepancy of 20 mm. The first extension was performed and resulted in 2 mm growth. Anaesthesia was not necessary. X-rays prior to and after the lengthening procedure were taken to demonstrate the increase in length of the endoprosthesys. Six weeks later the second extension of 5 mm was performed successfully. Further extensions of 5 mm will be

10 YEARS EXPERIENCE OF ADJUVANT RADIATION THERAPY FOR LOCALISED ADULT SOFT TISSUE SARCOMAS Delaloge1, C. Le Pechoux1, J.C. Buzas2, P. Fontaine3 1Department of Radiation Oncology 2Department of Statistics, IGR, Villejuif, France

Between January 1984 and December 1993, 119 adult patients (68 males and 51 females, median age 42.5 years) were treated at our institute for localised sarcoma of extracranial soft tissue, by maximal conservative surgery followed by adjuvant radiation therapy. 30% had previously undergone surgery and relapsed. Sites affected were the extremities (63.5%), trunk wall (13%), retroperitoneum (9%) and head and neck (4%). Predominant histologies were MFH (27%) and Synovial sarcoma (19%). 85% of tumours were grade 2 or 3. Thirty-seven patients (31%) received chemotherapy. In 75% of the cases, radiation therapy was performed using standard techniques and doses of at least 45 Gy. Fractionated radiotherapy (dose 45 Gy) was used for patients treated between 1989 and 1992 (25%).

Treatment evaluation was performed on 1st March, 1995. Median follow-up is 66 months. 24% of the patients relapsed locally, and 47%