

more than 3.5 cm and not susceptible to radiosurgery. Patients were classified belonging to RPA classe I and II (7, 17 respectively). Treatment was conducted by using linac-based stereotactic system in 16 patients and Cyberknife system in 8 patients. The frameless image-guided radiosurgery system named Cyberknife uses the coupling of orthogonal pair of x-ray cameras to a dynamically manipulated robot-mounted linear accelerator possessing six degrees of freedom, which guides the therapy beam to the target without the use of frame-based fixation. The accuracy of the whole system is below 1 mm: the reproducibility of treatment plans during the different sessions is guaranteed. For all treatments the median dose was 24 Gy in 3 fractions (reference isodose 80%). Whole-brain irradiation was not applied as an initial treatment.

Results: Stable disease was defined as unchanged tumor volume at the time of radiologic follow-up (mean 2.5 months), including patients with total or partial regression of tumor size: local control was obtained in 19 (86%) patients. Only 3 patients (13%) had new metastases developed in areas not covered by stereotactic irradiation. The majority of the patients (87%) died due to progression of their extracranial disease and only 13% died as a result of brain metastases. Treatment-related complications were observed in 2 patients in the early period (<3 months). Neurological improvement was observed in 8 patients (35%).

Conclusions: Hypofractionated conformal stereotactic radiotherapy is an effective noninvasive technique for treatment of single or oligo brain metastases. Results concerning local control seem to be comparable to those of single fraction radiosurgery. Because in the vast majority of cases HCSRT is a palliative treatment, survival is determined mainly by the systemic disease. The omission of WBRT may increase the risk of developing new brain metastases outside the irradiated area but salvage therapy is available in case of relapse. Acute and late complications with this strategy are in the range of what has been reported previously for HCSRT and single fraction radiosurgery.

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POSTER

Verification of the therapeutic stereotactic irradiation (STI) dose for early lung cancer

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Stereotactic irradiation (STI) therapy has recently been reported to be effective for early lung cancer and possible to be decreased in harmful side effects. This treatment included a high dose per fraction (12 to 15 Gy) with hypofractionation compared to a dose of conventional irradiation (2 Gy). If the dose-precision of STI for lung cancer was not corrected, the treatment possibly resulted in the decline in the therapeutic effect and the increase in a harmful matter. The lung is a hypodensity structure consists of the air and the irregular alveolar organization. It is very difficult to calculate the correct therapeutic dose in STI therapy using non-coplanar, irregular fields and multi-direction. So, we originally produced an irregular density phantom which was on-line taken in the treatment planning system as computed tomographic images. Then, the plan was rewritten and recalculated on the phantom, and we compared the calculated doses with the exposed doses. We start the STI treatment, when the discrepancy is within plus/minus 3%. In conclusion, our STI treatment for early lung cancer has been performed in a high precision with a new original phantom.

Surgery

Oral presentations (Mon, 31 Oct, 9.15–11.15)

Surgery

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ORAL

Local recurrences in the TME trial: can we reduce the radiotherapy field?

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Introduction: The number of local recurrences (LR) in rectal cancer has significantly reduced with the introduction of preoperative (chemo) radiotherapy. As known from the literature, reduction of the irradiated volume will diminish both early and late toxicity. This study was undertaken to evaluate where local recurrences occur and whether the upper border of the treatment fields can be adjusted to the level of S1/S2.

Methods: All LR occurring in the Dutch TME trial patients were studied to determine their exact localisation. CT or MRI scans of LR were reviewed by three observers in consensus and the upper border of the recurrent tumour was determined in 70 patients so far. If the LR originated below the level of S2, adjustment of the cranial border of the treatment field was considered possible.

Results: In total 118 LR occurred; 78 recurrences were confirmed at cytology or histology and in 36 patients, the diagnosis of LR was based on imaging only. The distance of the primary tumour to the anal verge was <5 cm in 42%, 5–10 cm in 42% and >10 cm in 16% of the patients. Primary tumours were TNM stage I in 5%, TNM stage II in 20% and TNM stage III in 64%.

Six percent (4/70) of the recurrences had an upper border at the level of S1/S2, and 13% (9/70) was at the level of S2/S3 and 81% was located at a lower level. LR with the upper border above the level of S3 had their primary tumour in the upper part of the rectum (>10 cm, n=3), but also in the midrectum (5–10 cm, n=4) and in the lower rectum (<5 cm, n=6). In 5/11 patients, the cranial border of the treatment field could have been lowered, because the LR occurred over the whole presacral area and probably originated from a lower level. Of the six remaining patients, 3 were irradiated and had apparently an in-field recurrence.

Conclusions: Eighty-one percent of the LR occurred under the level of S2, and in 91% the upper border could have been lowered to the level of S1/S2. Initial tumour height is not strictly correlated with the localisation of the recurrent tumour and cannot be used to select patients at risk for a high located recurrence. Therefore, lowering the upper border of the RT field is questionable.

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ORAL

Continence and quality of life after salvage techniques to avoid colostomy: coloanal anastomosis versus perineal colostomy, in cases of very low rectal cancer

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Background: In cases of very low rectal carcinoma, 2 major techniques have been proposed to avoid abdominal colostomy: coloanal anastomosis (CAA) or a perineal reconstruction after abdominoperineal resection (APR). In our institution the perineal reconstruction technique adopted was the perineal colostomy (PC) with an auto-transplant of a free flap of colonic muscle around the colon a few centimeters upstream of the perineal stoma. The aim of this study was to compare the functional results and the quality of life (QoL) of these two salvage techniques.

Patients and methods: 50 patients were operated on from 1991 to 2002 for rectal adenocarcinoma and analyzed: they had a follow-up of more than one year, and neither relapse nor treatment. A group of 38 patients had a CAA, including: J pouch (n=10), coloplasty (n=2) and intersphincteric resection (n=3). The two groups, CAA versus PC, were comparable for: mean age 61(44–76) versus 56(37–75), preoperative radiotherapy 84% versus 75%, T3 tumor stage 52% versus 50% and T4 0% versus 0%.

Results: The global Vaizey score was equivalent for the two groups, CAA 12(0–22) versus PC 11 (8–13). The only differences reported were more