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## RESECTION OF COLORECTAL LIVER METASTASES

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Survival after diagnosis of colorectal cancer liver metastases is short in untreated patients and range from 3 to 18 months. The most important factors influencing length of survival are the extent of liver involvement and presence of infiltration of adjacent organs. A minority, an estimated 5-10 %, of all patients with liver metastases of colorectal cancer are candidates for surgical treatment. Patients operated on for cure do benefit from liver resection with a prolongation of survival, whereas patients with a non-radical resection have a similar prognosis as untreated patients and carry the burden of the operative risk. There is obviously a need for precise identification of patients likely to benefit from resection. Determinants of survival and recurrence after liver resection may be used to formulate indications for surgery. Early hepatic recurrence and short survival are seen in patients with 4 or more metastases, extrahepatic disease, and a liver tumour volume exceeding 25%. Bilateral as compared to unilateral liver metastases do not have a clearly demonstrable survival influence but seems to carry an increased risk of early hepatic recurrence. In about half of the patients extrahepatic recurrence occurs, but there is no predicting factor identified. A tumour-free margin of resection of less than 10 mm is one of the most important treatment-related variables and part of the aim of a curable resection.

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## SURGERY IN METASTATIC BRAIN DISEASE

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Patients with single brain metastasis may be offered the combination of neurosurgery and radiotherapy or radiotherapy alone. The best results are in general observed for the combined treatment, but this may be due to selection of patients based on their neurological performance status and the extent of extracranial tumour activity. In one prospective randomized trial in 48 patients, it was found that patients with single brain metastasis did better with the combined treatment (median survival 10 months) than with radiotherapy alone (survival of 3 months) (NEJM 1990;322:494-500). A recently disclosed trial from the Netherlands with a similar design also showed that patients with the combined treatment had a better survival (10 months) than with radiotherapy alone (6 months). However, these results were only established in patients with absent or stable extracranial cancer which was specified as no evidence of cancer or no signs of progression extracranially in the previous three months. Patients with active extracranial disease had a survival of 5 months irrespective of the combined treatment was given or radiotherapy alone. To determine the quality of life of these patients, also the duration of functionally independent survival was determined. The duration of being functionally independent was in general one to three months shorter than for mere survival, but the same differences as found for survival as such in relation to the applied treatment were observed. Patients with inactive extracranial cancer had a median duration for functionally independent survival of 11 months following the combined treatment versus 6 months following radiotherapy alone. Multivariate analysis revealed that age over 60 years was a poor and independent prognostic factor (Ann Neurol 1992;32:286-287).

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## SURGICAL TREATMENT OF BONE METASTASES

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Surgical treatment of bone metastases represents a palliative method in case of fractures, either threatening or occurred aiming at rapid mobilisation of the patient with a low rate of morbidity. Indication as well as method of treatment have to be adjusted and varied individually. At present, the standardized procedure consists of intralesional resection of the metastasis followed by stabilisation with an osteosynthesis plate and filling of the defect with methylmetacrylate. In case of fractures in proximity of joints reconstruction has to be done by endoprosthetic replacement. Due to increased survival time of patients with bone metastases local recurrences have occurred more frequently requiring marginal instead of intralesional resections. Therefore, this treatment is performed in all cases with favourable prognoses or in tumors less accessible to systemic treatment.

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## SURGERY OF LUNG METASTASES AS PART OF A MULTI-MODALITY CONCEPT

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Pulmonary metastasis of a malignant tumor means its generalisation; therefore the medical therapy of the tumor (chemo- and/or endocrine therapy) stands in the forefront of treatment. However, the results of the last few years and our own experiences show that surgical removal of pulmonary metastases is part of a combined oncological concept. Between 1.1.1972 and 31.12.1991 surgery was indicated in 843 cases in 729 patients. With medical therapy alone or in combination with surgical treatment, good palliative and also potentially curative effects are possible in many cases. The 5-year-survival rate of all 729 patients amounted to 33%, especially in carcinomas of the testes it was 62%, in hypernephromas 32%, in colorectal carcinomas 35% and in breast cancers 31%. The indication for different treatment modalities depends on different facts: histology, grading, tumor-marker-status, the expected sensibility of chemotherapy, duration of the metastases-free-interval and number of metastases. Statistically significant differences were present, if surgery was carried out with a potentially curative aim (5-year-survival rate 42%, median survival: 1154 days). A disease-free interval lasting more than 3 years revealed a better prognosis of breast cancers and soft tissue sarcomas and hypernephromas. A better prognosis with respect to the number of metastases was shown in breast cancer, osteosarcomas and hypernephromas. With respect to sex, primary tumor, involvement of side, resection technique, age, there were statistically no differences in prognosis. It is necessary to determine prognostic factors for smaller, homogenous groups of patients too. An improvement in therapy for pulmonary metastases is thereby possible.