

SURGICAL TREATMENT OF LUNG METASTASES

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Being an end-organ with an extensive capillary bed, the lungs are the most common site of metastasis for solid tumors. Isolated lung metastasis does not always indicate uncontrolled disease, as in other systemic metastases. Studies have reported that pulmonary metastasectomy has a positive effect on survival in many histological types of cancer. The general principle for surgical indications is primary tumor's being under control, presence of only limited metastases in the lung except for some special cases, resectable nodules and an adequate postoperative pulmonary reserve in patients. The success of the surgery is determined by disease-free interval, the doubling time of the tumor and the ability to perform complete resection. But most importantly, the proper selection of the operable patients positively affect survival [1].

Apart from lung cancer resection, pulmonary metastasectomy is the most commonly performed operation in thoracic surgery, accounting for 15-40% of all surgeries [2]. While lung metastasis is detected during the disease course in approximately 30% of cancers, this rate is much higher in sarcomas and melanomas. Most pulmonary metastases do not cause clinical symptoms. In general, they are incidentally detected in radiological examinations during patient follow-up. The doubling time of the tumor not only has an effect on postresectional survival but also indi-

rectly provides information about the biological nature of the tumor. A fewer number of nodules, resectability and longer disease-free interval are considered as good prognostic factors by many researchers [3]. Molecular research, on which studies have focused for a long time, predicts the prognostic factors for the metastasis tendency of tumor cells, such as detection of ErbB2 gene expression in osteosarcoma patients as an indicator of early pulmonary metastases [4]. A metastasis staging system has been proposed by some researchers for survival analysis; however, there is no widely accepted system today. Each tumor is evaluated based on the TNM staging system determined for itself. In general, if the primary disease is controlled, if there is no extrathoracic metastasis, the lesion is resectable, and the patient is operable, surgery forms the basis of the treatment. Although the surgical technique is decided on patient basis, minimally invasive techniques have also been used as a result of the detailed parenchymal examination by the aid of technology of thin-slice computed tomography and the evaluation of the precise location of the nodules. The general approach is the R0 resection of the tumor with minimal loss of parenchyma, by using the conventional technique.

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