

PERCUTANEOUS CT GUIDED MICROWAVE ABLATION FOR LUNG METASTASES

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Objective:

Introduction: Surgical removal of lung metastases can prolong survival in patients with a survival rate of up to 50%.(1) However, many patients are considered ineligible for surgical metastasectomy due to medical co-morbidities or prior metastasectomy. Along with that, a high possibility of future metastases in these patients necessitates prioritizing lung function preservation. Percutaneous CT guided thermal ablation is a new safe and efficient therapeutic method in metastatic lesions of the lung with a reported median survival ranging from up to 46 months.(2) Local reccurence rates in lesions smaller then 2 cm is 5 %, which puts this method in the same category with surgical resection. Benefits of ablation are that it has minimal effect on pulmonary function, it can be easily repeated but also considered more acceptable to patients because of the associated short hospital stay and post-procedure recovery.(3) From the oncological standpoint an important feature is that chemotherapy treatment does not need to be interrupted while thermal ablation is performed. Expert consensus



documents suggest that for curative ablation a tumor number of ≤3 in the case of unilateral metastases and ≤5 in the case of bilateral metastases should be employed.

Purpose: To investigate the safety and effectiveness of percutaneous microwave ablation for lung metastasis (CRLM) with evaluation of factors influencing the efficacy of the method.

Patients and methods: From July 2017 to September 2020, 36 patients with lung metastases treated with percutaneous MWA were included in our study. All patients were followed up for at least 6 months with a median follow up of 13 months. We assessed primary technical success, local tumor progression (LTP) and complications. Most patients were diagnosed with metastatic colorectal carcinoma(22). Other primary tumor locations were lung (6), breast (2), kidney (4) and sarcoma (2).

Results: Mean tumor diameter was 17.4 ± 6.2 mm, range 8-67 mm. Primary technical success was achieved in 76% (27/36) of lesions. LTP occurred in 8,1% (2/24) of lesions smaller then 3 cm and 42% (5/12) of lesion larger the 3 cm in diameter. LTP was more likely to occur in lesions larger than 3 cm in diameter, near a large vascular structure (<5 mm). All patients were treated using sedation and local anesthesia.

Conclusions: Percutaneous ablation of lung metastases is a safe and effective method that is a valuable option and should be considered more often in oligometastatic lung disease for patients who are not ideal surgery candidates.

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