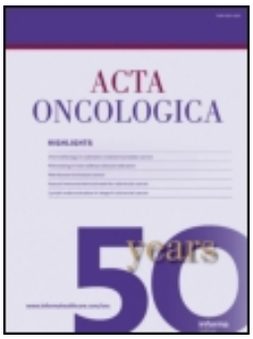

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LETTER TO THE EDITOR

Extending the survival of patients with melanoma lung metastases through radiofrequency ablation

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To the Editor

The survival outcome of patients with stage-IV melanoma or recurrent melanoma is uniformly poor with an estimated median survival of six months [1,2]. Melanoma lung metastases represent a site of visceral metastasis with the most favored outcome where a 50% reduction in relative risk of death may be achieved through treatment of melanoma lung metastases with surgery [3]. In non-surgical candidates, radiofrequency ablation (RFA) is an alternate local treatment which first arose out of the literature on ablation of liver tumors and is now increasingly recognised as an option for patients with lung metastases [4]. We describe three patients who underwent RFA for melanoma lung metastases to demonstrate the efficacy and feasibility of this treatment that may become useful in future treatments to expand the role of pulmonary metastasectomy through a combination of resection and ablation or be applied in patients with unresectable lung metastases.

The first patient was a fit and healthy 63-year-old woman with a history of melanoma from an unknown primary and brain metastases treated with a subtotal excision and adjuvant whole brain radiation therapy before recurring with a solitary left lung metastasis of 4 cm by 4 cm and two cerebral metastases close to the previous resection margin. She was commenced on six cycles of Temozolamide. During the time on chemotherapy, there were shrinkage of the cerebral tumors and the lung metastasis remained stable. She underwent fluoro-CT guided RFA using a Rita 1500 generator (Rita Medical, Mountain View, CA) with real time imaging. Her cerebral metastases were further treated with stereotactic radiosurgery. She survived 14 months after combined treatment of brain and lung metastases using RFA and stereotactic radiosurgery but died of an unrelated cause of acute abdomen from a perforated viscus.

The second patient was a 60-year-old woman with right axillary melanoma lymph node metastases from an unknown primary site. Following axillary clearance, staging scans revealed several subcentimetre lung metastases. The patient was commenced on three cycles of Dacarbazine and Interferon. This systemic treatment led to resolution of majority of her lung metastases. However, 13 months later, follow-up imaging scans revealed increasing sizes of three bilateral lung metastases with the largest in the left lung measuring 1.7 cm and the two smaller metastases measuring 1 cm in the right lung. She underwent treatment of the three bilateral lung metastases during a single RFA procedure and continued on Interferon treatment. She remained disease-free for 13 months post RFA before developing disseminated metastases with a new right apical lung mass, right hilar-mediastinal mass, and bowel metastases. She was commenced on systemic chemotherapy (Fotemustine) but continued to develop progressive disease with cerebral metastases and died of disease 18 months post RFA.

The final patient is a 55-year-old man with an 11 year history of metastatic ocular melanoma who was receiving ongoing thermal laser therapy who also had previous resection of liver and lung metastases before electing to undergo enucleation. He recently developed peritoneal recurrence and was treated with peritonectomy and continued on Dacarbazine chemotherapy postoperatively. While on chemotherapy, he developed a solitary pulmonary

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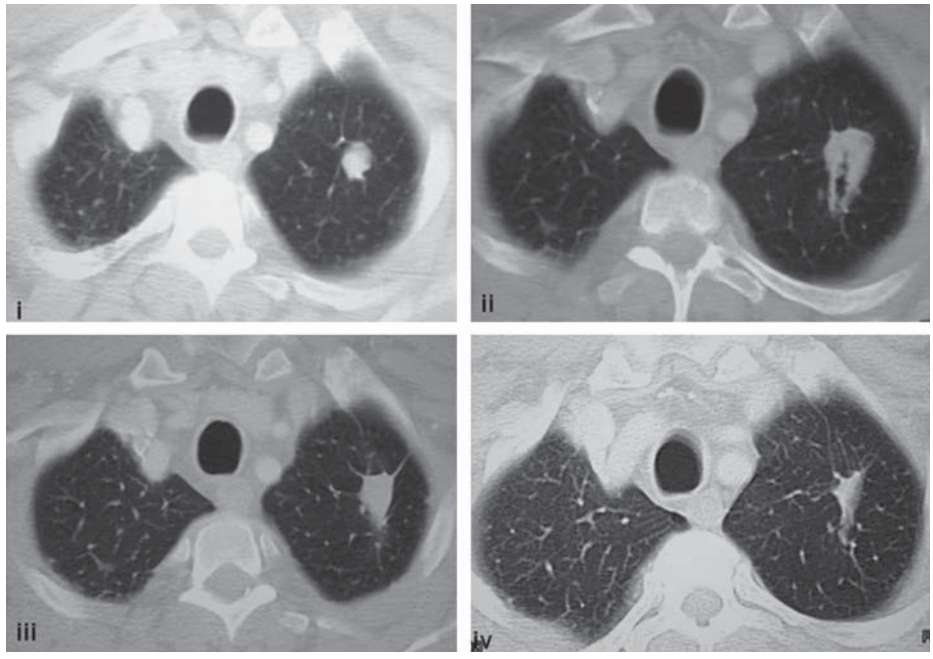

Figure 1. Representative images of lung metastases (i) pre-RFA treatment, (ii) one month post-RFA, (iii) six months post-RFA, and (iv) 18 months post-RFA where the target lesion demonstrates initial expansion of the size of the lesion as a result of cavitation, necrosis, and/or cyst formation leading to reduction in size over time.

metastasis in the left mid zone, two further liver lesions adjacent to suture lines and possible further abdominal serosal deposits. At this time, 25 months since the initial metastasectomy, he underwent a third repeat hepatectomy, cryotherapy to liver lesions, splenectomy, pelvic peritonectomy, and lung RFA. He continued to develop recurrent intra-abdominal visceral and peritoneal metastases and underwent two further cytoreductive surgeries. He was also enrolled on a vaccine clinical trial. By about 55 months since the initial surgery, there was obvious deterioration with extensive abdominal and lung metastases. Active treatment was withdrawn. The patient died of disease five years and five months from initial metastasectomy having undergone a combination of various multi-modality therapy including peritonectomy, liver resection, hepatic cryotherapy, radiofrequency of the lung, and visceral organ resections.

The purpose of this case series serves not to promote the role of RFA treatment for melanoma lung metastases but to demonstrate the feasibility of tumor control using lung ablation to extend the survival of patients with Stage IV melanoma. Pulmonary metastasectomy is strictly available to selected patients with isolated lung metastases only. By far, the largest cumulative experience of pulmonary metastasectomy of melanoma lung metastases is derived through the International Registry of Lung Metastases. In the registry study, 282 of 328 patients (86%) underwent a complete pulmonary metastasectomy with an overall median survival of 17 months, and 5-year survival of 18% [5]. Sixty percent of patients in this reported cohort had single metastasis. Analysis of treatment related factors revealed through a multivariate analyses that patients with a single lesion, whose lung metastasis developed after a period of greater than 36 months after initial diagnosis and having undergone a radical metastasectomy had the most favourable prognosis with 5-year survival of 29%. Therefore, the premise for selecting patients with melanoma lung metastases for pulmonary metastasectomy has largely been based on these strict criteria that only carefully selected patients would be suitable for surgery. Therefore, the survival of patients with resected melanoma lung metastases when derived through this literature may represent a misnomer due to the inherent selection bias.

As survival of patients with Stage IV melanoma continues to be predicted by the suitability for surgery, patients with unresectable disease would often succumb to the disease more rapidly. Given the lack of effective systemic treatments at the present time, RFA may prove to be useful when performed in combination with other surgical procedures or in patients with unresectable disease to expand the criteria for resection and to extend the survival time of patients with metastatic melanoma who would otherwise not be offered a curative ther-

apy. This is the first series for which such an approach of combined modality therapy has been described.

Declaration of interest: The authors report no conflicts of interest. The authors alone are responsible for the content and writing of the paper.

References

[1] Brand CU, Ellwanger U, Stroebel W, Meier F, Schlagenhauff B, Rassner G, et al. Prolonged survival of 2 years or longer for patients with disseminated melanoma. An analysis of related prognostic factors. Cancer 1997;79:2345–53.

[2] Manola J, Atkins M, Ibrahim J, Kirkwood J. Prognostic factors in metastatic melanoma: A pooled analysis of Eastern Cooperative Oncology Group trials. J Clin Oncol 2000;18: 3782–93.

[3] Petersen RP, Hanish SI, Haney JC, Miller CC, 3rd, Burfeind WR, Jr., Tyler DS, et al. Improved survival with pulmonary metastasectomy: An analysis of 1720 patients with pulmonary metastatic melanoma.[see comment]. J Thorac Cardiovasc Surg 2007;133:104–10.

[4] Yan TD, King J, Sjarif A, Glenn D, Steinke K, Morris DL. Percutaneous radiofrequency ablation of pulmonary metastases from colorectal carcinoma: Prognostic determinants for survival. Ann Surg Oncol 2006;13:1529–37.

[5] Leo F, Cagini L, Cappello M, Van Geel AN, Maggi G, Goldstraw P, et al. Lung metastases from melanoma: When is surgical treatment warranted? Br J Cancer 2000; 83:569–72.