ment. Although this is an important point and may be related to the presence of viable tumor in their series, no viable tumor should remain on the electrode if ablation of the tumor with creation of an adequate clear margin was successful. It is therefore important to select patients for ablation when tumor treatment with a clear margin can indeed be reasonably achieved. In any other case, ablation should not be offered with a curative intent.

The performance of tissue examinations in the ablated tumors is important to confirm coagulation necrosis or detect residual viable tumor, able to proliferate. This may allow identification of patients at risk of LTP and additional treatment that may improve outcomes.

Disclosure Statement

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Reply

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Dear Sir,

Sofocleous et al. suggested that cells staining positive for G6PD as described in our article [1] possibly represented normal viable hepatocytes and not tumour cells. Although this cannot be excluded, we have scored the G6PD-positive cells according to the nucleus/cytoplasm (N/C) ratio, which is usually higher in malignant cells [2, 3]. The N/C ratios were comparable with the ratios found in the HE stains of cytopins of the same application. Ideally, a tumour-specific counterstain should be used to be absolutely sure.

Macroscopic tissue was present in 87.5% of cases after treatment with the RITA electrode. As we mentioned in our article, there were, however, no morphologically intact tumour cells present. Tissue attached to the needle applicator in 2 of 7 applications using the RITA electrode

demonstrated microscopically identifiable cells. In one instance, these cells appeared to be intact liver cells. In the other application with recognisable cells, the cells proved to be tumour cells, with clear signs of thermal injury. The other 5 specimens contained completely destructed, non-identifiable cells.

We agree with Sofocleous et al. that the addition of more cases could have made a difference in the incidence of viable cells found between the electrodes, especially since 24 applications were performed with the Radiotherapeutics (RTx) electrode and only 8 with the RITA electrode. This clearly was a limitation of our observational study in which we included all consecutive patients without predetermining the choice of ablation system used by the surgeon. We have to await future

results of a more elaborate series to see if viable cells truly do appear more often after the RTx applicators compared to other needles. The cause for irresectability and indications for surgery were equally distributed over the ablation systems used. We are planning to report a follow-up study focusing on local tumour progression in our case material and, in this connection, read with great interest the paper of Sofocleous et al. [4]. We agree that caspase 3 and Ki67 are useful prognostic markers as also shown by Sofocleous et al. Immunohistochemical staining characteristics, however, may be preserved even in heat-fixed tissue [5]. For this reason we used G6PD staining to measure enzyme activity. We indeed attributed the finding of intact tumour cells on the applicators to the lack of performing track ablation.

We do agree with Sofocleous et al. that no viable tumour should have remained on the electrode if complete ablation was achieved. Ideally, track ablation would then not be necessary. All tumours in treated patients were deemed amenable to local ablative therapy on contrast-enhanced CT, based on the possibility of ablating an area larger than the tumour. To exclude the possibility of spreading tumour cells, especially when repositioning applicators during ablation when treatment is not completed, we strongly advise track ablation.

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