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Letter to the Editor


We thank Fankhauser and colleagues for their comments on our paper [1] presenting our experience with indocyanine green (ICG)-99mTc-nanocolloid as a sentinel node (SN) tracer for penile cancer (PeCa). To summarise, we observed that: (1) single-photon emission computed tomography with low-dose computed tomography (SPECT/CT) enabled identification of SNs that were not visible on lymphoscintigraphy (86 SNs; 7.4%); (2) ICG-99mTc-nanocolloid yielded higher intraoperative optical SN detection rates compared to blue dye (95% vs 56%); and (3) blue dye “missed” 16% of the tumour-positive SNs (which were all radioactive + fluorescent).

SPECT/CT was introduced for lymphatic mapping as early as 2009 [2], and we have routinely implemented this modality for PeCa ever since. The greater sensitivity, third dimension, and anatomical context improve SN detection and help in distinguishing SNs from second-tier nodes. These properties led to better disease-free survival in melanoma [3]. The limited detrimental stochastic effect of including low-dose CT is 0.002 Sv × 0.0041 Sv × 100% = 0.00082% [4], which, in our view, is outweighed by the individual risk of morbidity and mortality from PeCa recurrence.

We have previously shown that ICG-99mTc-nanocolloid exhibits the same drainage and radioactive properties as 99mTc-nanocolloid [5], with the added benefit that the radioactive nodes can also be intraoperatively visualised via the nanocolloid-bound fluorescent dye ICG. During the past decade, this optical extension of the radioguided procedure has proven itself in >1500 patients with various SN indications [1,5,6]. To the best of our knowledge, there has never been a study showing that adding blue dye led to better clinical outcomes and yet it was adopted as the standard of care because it enabled SN visualisation during surgery. By yielding a 39% higher SN visualisation rate in our study, ICG-99mTc-nanocolloid has proven its capability of further enhancing the surgeon’s experience.

Regarding the negative predictive value, we reported a false negative (FN) rate of 8.7% [1], which is perfectly in line with previously reported values (5–22%) [7,8]. As stated in our manuscript, an FN case can be caused by multiple factors, and not all of them are influenced by improving preoperative or intraoperative SN visualisation. Therefore, radical reductions in the FN rate could not have been expected.

Innovations do tend to come with additional costs. However, it has been shown that SPECT/CT is cost-effective [9] and comes with the cost benefit of reducing non-visualisation at lymphoscintigraphy (by 10–25%), thereby preventing costly repeat procedures [10,11]. The (limited) added costs of ICG and one-time investment in a fluorescence camera were already discussed in our manuscript. When shared among departments (as indications increase), depreciation costs can be minimised.

To conclude, we believe that the better SN detection of SPECT/CT and the superior SN visualisation when using ICG-99mTc-nanocolloid merit consideration of broader implementation of this approach. However, despite relying on the largest single-centre retrospective data set available, we agree that our findings still need to be validated in a (prospective) multicentre setting. Therefore, we hope that this publication will (re-)ignite worldwide interest in the use of SN biopsy in PeCa patients.

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References


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