Letter to the Editor


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To the Editor,

This paper presents work on cancer detection in mouse muscle tissue using optical spectroscopy to monitor ultrasound-induced blood stasis. The authors discuss the application of optical diagnostic techniques to large organs and tissues, including optical breast imaging techniques. In the course of this discussion, it is stated that “Using techniques of optical coherence tomography (OCT), whole-breast imaging is possible.” Our recent work on the application of OCT to the optical biopsy of lymph node structure is cited in support of this statement. We are concerned that this may lead to a misinterpretation of our work by some readers.

We do not, in fact, contend that OCT is capable of imaging an entire breast. OCT is limited to a depth penetration on the order of 1–3 mm in most tissues, and breast tissue is not an exception. Instead, we propose that OCT may be used for tumor margin and lymph node assessment during open surgery when the tissue of interest is exposed. We are, additionally, developing tools to couple OCT beam delivery into clinical devices that are used for minimally invasive evaluation of locations throughout the breast. For example, an OCT-coupled biopsy needle could potentially be used for automated disease identification deep within the breast.

We have discussed these issues with the authors, and they have noted that diffuse optical tomography work should have been referenced instead of OCT. They have asked that we refer readers to whole-breast imaging work by Briton Chance and Frans Kuijpers.

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