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Title:Terahertz pulse imaging of micro-metastatic lymph nodes in early-stage cervical cancer patients

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Abstract:Lymph node metastasis is an important prognostic factor in cervical cancer patients. We report THz imaging for detecting micro-metastatic foci in the lymph nodes of early-stage uterine cervical cancer patients. Five paraffin-embedded metastatic lymph nodes from two cervical cancer patients were imaged using a THz time-domain spectroscopy system in the reflection mode. The size and shape of the tumor regions were compared with those from histopathologic examinations. The metastatic portions of lymph nodes as small as 3 mm were well delineated by THz imaging. The reflected peak amplitudes were lower in metastatic portions than in the normal portions of lymph nodes, and the difference in their peak-to-peak amplitudes was ~5%.

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