

LETTER TO THE EDITOR

Reply: High Sensitivity of Indocyanine Green Fluorescence Imaging in Detection of Sentinel Node

TO THE EDITOR,

The argument by Takahashi et al. has been discussed in our article.¹ The following is our brief response.

Kitai et al. noted that the sensitivity of fluorescence spectroscopy is greater than that of absorption spectroscopy.² They also reported that it was possible to detect fluorescence with an indocyanine green (ICG) solution embedded 10 mm deep in a material that has optical properties like that of human tissue. In comparison, infrared rays can penetrate fatty tissues only to a depth of 3 mm. The difference could be critical in sentinel node detection. In this context, Ishikawa et al. reported an obese patient with a false-negative sentinel node when the infrared ray electronic endoscopy system was used.³

We reported that the ICG fluorescence imaging system was sensitive in both intraoperative ICG injection and ICG injection 1 day before surgery. We have argued that, similar to the radio-guided method, one advantage of preoperative tracer injection is that it eliminates the time-consuming intraoperative endoscopy, but has the disadvantage of loss of real-time tracing.¹

An astral lamp, but not an ordinary light lamp, influences the ICG fluorescence imaging system. Therefore, surgery can be continued under an ordinary light lamp,

which should not interfere with the ICG fluorescence imaging system. Furthermore, the light emitted by the laparoscope into the peritoneal cavity does not influence the ICG fluorescence imaging system. Laparoscopic exploration or surgery can be conducted under such an environment.

The laparoscopic system described in our report is not available commercially.¹ We have completed a preliminary study with a newly developed prototype system for laparoscopic surgery and are preparing a new report on its use in laparoscopic surgery.

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