

—Photogravure—

Intraoperative Lymphatic Mapping by Dye and/or Radioactive Tracer in Early Gastric Cancer

Akira Tokunaga, Takeshi Okuda, Takashi Tajiri and Masahiko Onda
Department of Surgery (I), Nippon Medical School

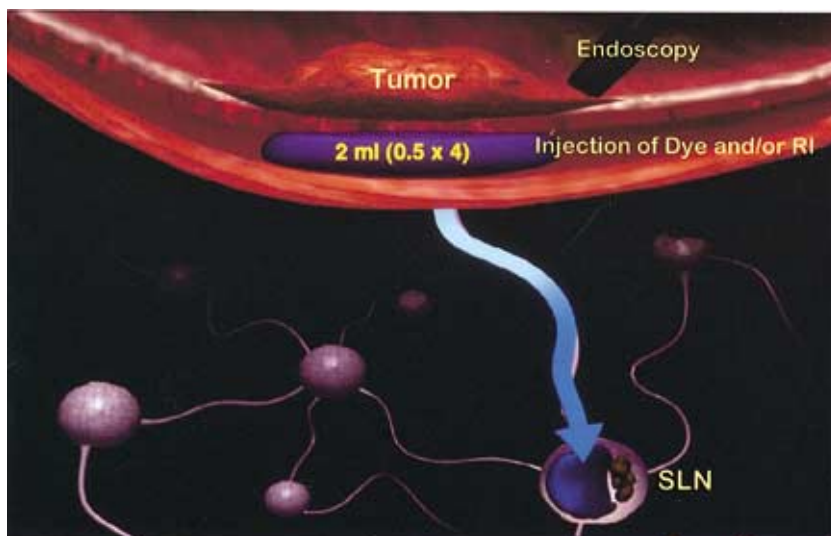


Fig. 1

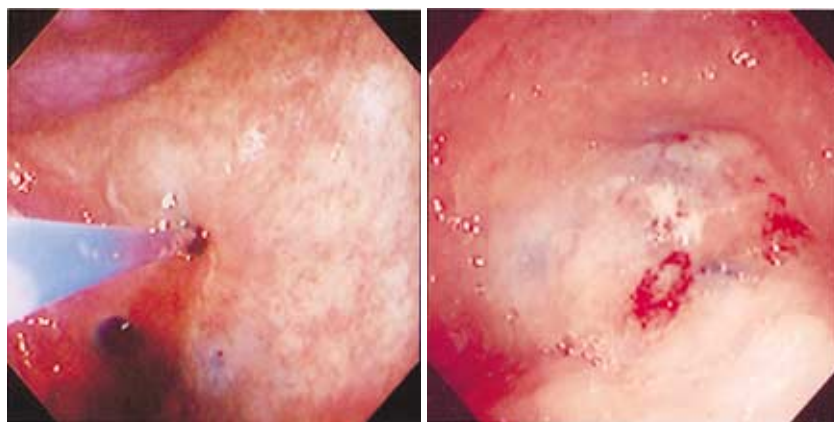


Fig. 2

The intraoperative lymphatic mapping by dye and/or radioactive tracer identifies the sentinel lymph node (SLN), which is the first lymph node that receives drainage from the primary tumor. The concept of SLN has been proved and applied clinically in the treatment of melanoma and breast cancer, and has been also extended to the surgery of early gastric cancer. The SLN mapping represents a major advance in the staging of the disease and predicting the nodal status not only in melanoma and breast cancer but also in gastric cancer. Selective lymphadenectomy would be adopted in the surgery of early gastric cancer if the concept of SLN is evident. Micrometastasis in the SLN is examined microscopically by a hematoxylin and eosin stained section and an immunohistochemical staining of cytokeratin.

This photogravure shows the technique of intraoperative lymphatic mapping by dye and/or radioactive tracer in early gastric cancer.

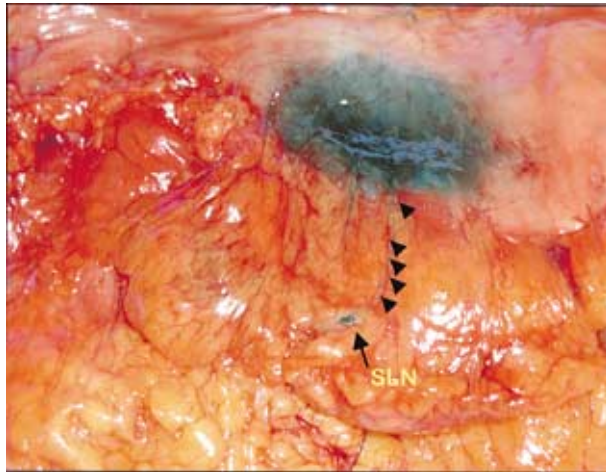


Fig. 3

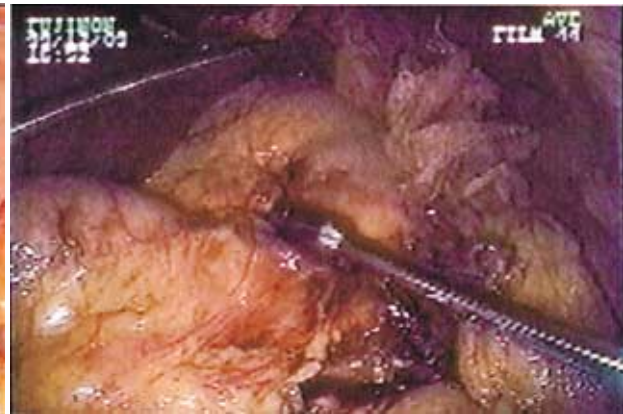


Fig. 4

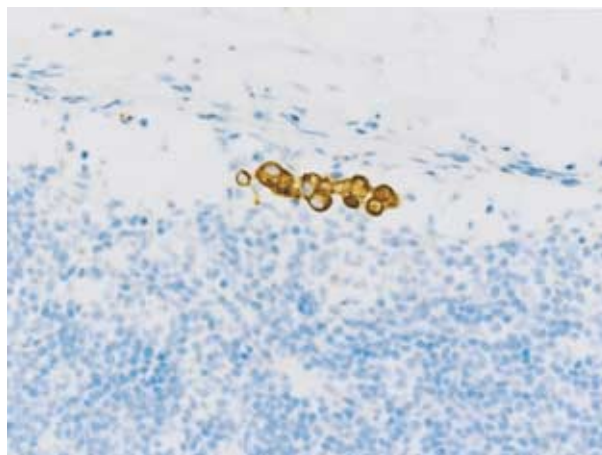


Fig. 5

解説：センチネルリンパ節は癌の最も近くにあるリンパ管からのリンパ液が最初に流れ込むリンパ節のことで、原発巣を離れた癌細胞が最初に到達するリンパ節である。このリンパ節の転移の有無を検索し、転移がなければ、他のリンパ節には転移がなく、それ以上のリンパ節廓清が不要となる。これが sentinel node concept で、悪性黒色腫や乳癌では臨床応用されている¹。消化器癌において、この概念が成立するか否か論議され、早期胃癌においても色素法、RI 法による sentinel node mapping が行われている^{2,3}。本法が早期胃癌で確立すれば、早期胃癌手術では、過大なリンパ節廓清を避けた機能温存ならびに根治性を維持した縮小手術が可能となり、癌の低侵襲手術が実現し、患者さんの QOL 維持に貢献する。

Fig. 1 The technique of lymphatic mapping and SLN by dye and/or radioactive tracer.*

Fig. 2 Endoscopic injection of dye is performed intraoperatively.

Two ml of Indigocarmine or indocyanin green is injected around the tumor (IIc type of early gastric cancer) submucosally by using 23 gage puncture needle.

a) injection b) after injection

Fig. 3 Afferent lymphatic vessels and SLNs along the greater curvature of the stomach are seen 10 minutes after the dye injection. An arrow (↑) shows SLN and triangles (▲) show lymphatic vessel.

Fig. 4 Detection of SLNs with radioactivity is performed by gamma navigation system intraoperatively.*

Fig. 5 Immunohistochemical demonstration of micrometastasis in SLN by staining with anticytokeratin antibody. Positive staining is seen in cancer cells.

References

1. Morton DL, Wen DR, Wong JH, Economou JS, Cagel LA, Storm K, Foshag LJ, Cochran AJ: Technical detail of intraoperative lymphatic mapping for early stage melanoma. Arch Surg 1992; 127: 392-399.
2. Kitagawa Y, Kitajima M: Gastrointestinal cancer and sentinel node navigation surgery. J Surg Oncol 2002; 79: 188-193
3. Hiratuka M, Miyashiro I, Ishikawa O, Furukawa H, Motomura K, Ohigashi H, Kameyama M, Sasaki Y, Kabuto T, Ishiguro S, Imaoka S, Koyama H: Application of sentinel node biopsy to gastric cancer surgery. Surgery 2001; 129: 335-340

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