Difference of Sentinel Lymph Node Identification between Technetium-99$^{\text{m}}$ Neomannosyl Human Serum Albumin, ^{99m}Tc-MSA) and ^{99m}Tc-Phytate in Esophageal cancer

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Purpose

We aimed to compare the novel mannose receptor-binding agent (Technetium-99m human serum albumin, ^{99m}Tc-MSA) with phytate for sentinel node mapping in esophageal cancer.

Methods

Twenty-six patients clinical T1 or T2N0M0 esophageal cancer who were candidates for esophagectomy and esophagogastrostomy with lymph node dissection for were enrolled. ^{99m}Tc-MSA or ^{99m}Tc-phytate was administered into submucosal layer of the peri-tumoral region 1 hour before surgery, respectively, in 12 and 14 patients. The radioactive lymph nodes were identified with preoperative lymphoscintigraphy and intraoperative gamma probe after (ex vivo) lymph node dissection.

Results

The patient's age and sex ratio of both groups were similar. Clinical stage, location of esophageal cancer, and operative technique were not different between the two groups. During operation, total number of dissected lymph node was not different between the two group (29.2±8.84 in MSA group, 30.5±10.09 in phytate group, p>0.05).

Sentinel node was identified in all cases of both groups except for one in phytate group. The number of sentinel nodes per patient was 2.6±1.51 in MSA group, which was significantly more than 1.8±0.80 in phytate group (p=0.012). Nine of 25 patients whose sentinel nodes could be identified had metastasis, but neither group showed any false-negative results for sentinel node identification.

Conclusions

Both MSA and phytate are reliable tracers for identifying sentinel nodes in early stage esophageal cancer. In particular, because sentinel node can be detected more frequently and accurately with MSA than with phytate, sentinel node mapping using MSA might be more useful in the large case study.