who developed anastomotic leakage and could therefore allow for early risk stratification of necrosis.

Disclosure: All authors have declared no conflicts of interest.

Keywords: Quantitative perfusion imaging, Fluorescence Imaging, perfusion, anastomotic leakage

PS01.187: ASSESSMENT OF THE BLOOD SUPPLY USING THE INDOCYANINE GREEN FLUORESCENCE METHOD AND POST-OPERATIVE EVALUATION OF ANASTOMOSIS DURING ESOPHAGECTOMY

Hiroyuki Kitagawa, Jan Iwabu, Tsutomu Namikawa, Kazuhiro Hanazaki
Kochi Medical School, Nankoku/JAPAN

Background: Postoperative anastomotic leakage is a severe complication after gastric tube reconstruction during esophagectomy. The aim of this study was to evaluate the usefulness of postoperative endoscopic assessment of anastomosis and its correlation with intraoperative indocyanine green (ICG) fluorescence assessment of the gastric tube.

Methods: We retrospectively reviewed 72 consecutive patients who underwent gastric tube reconstruction using the ICG fluorescence method during esophagectomy. Forty-six patients underwent the ICG line-marking method (LMM group; ICG before gastric tube creation). The other 26 underwent the conventional procedure and comprised the control group (ICG after gastric tube creation). Postoperative endoscopic assessment (PEA) of anastomosis was performed 7 days after surgery and results were classified as follows: grade 1 (normal or partial white coat), grade 2 (ulcer comprising less than half the circumference), and grade 3 (ulcer comprising more than half the circumference).

Results: Anastomotic leakage occurred in 7 of 72 patients (9.7%). The incidence of anastomotic leakage in the LMM group was tended to be lower than those in the control group (6.5% vs. 15.4%; P = 0.244). Of the 40 patients who underwent PEA, 3 (7.5%) had leakage. PEA grading was significantly associated with anastomotic leakage (P < 0.001). Better intraoperative ICG assessment was significantly associated with better endoscopic assessment grade (P = 0.041).

Conclusion: Intraoperative ICG assessment of the gastric tube was associated with PEA grading on anastomosis during esophagectomy.

Disclosure: All authors have declared no conflicts of interest.

Keywords: esophagectomy, indocyanine green fluorescence, ICG, anastomotic leakage

PS01.188: NOVEL ESOPHAGEAL RECONSTRUCTION VIA TRANS-MEDIASTINAL ROUTE FROM POSTERIOR TO ANTERIOR MEDIASTINUM FOR ESOPHAGECTOMY FOR GASTRECTOMIZED PATIENTS WITH HIGH RISKS

Takashi Yasuda, Osamu Shiraishi, Mitsuru Iwama, Hiroaki Kato, Yoko Hiraki, Atsushi Yasuda, Masayuki Shinkai, Yutaka Kimura, Motohiro Imano
Kinzai University Faculty of Medicine, Osuka-Sayama/JAPAN

Background: Elderly patients or those who have undergone surgery for head and neck cancer (HNC) have a potential risk of dysphagia, in addition, the latter has a considerable difficulty for surgery for the neck. Infrathoracic anastomosis is preferable to preserve swallowing function and reduce surgical risk, because the cervical procedure can be avoided. However, the stomach cannot be used as a substitute in gastrectomized patients; thus, securing graft blood supply is critical. Nevertheless, microvascular anastomosis cannot easily be added in procedures for infrathoracic posterior mediastinal reconstruction. We therefore designed a novel technique for esophageal reconstruction to enable both infrathoracic anastomosis and microvascular anastomosis simultaneously even in gastrectomized patients. The purpose of this study was to evaluate the usefulness and safety of this technique.

Methods: Esophagectomy with mediastinal lymphadenectomy is performed through a right thoracotomy in the left decubitus position, and temporary chest closure is done after the esophagus is divided at the upper mediastinum with safe margin. Next, the patient is placed in the left half-side-lying position, and the jejunal or ileocolic graft for reconstruction is created after removal of the remnant stomach in the supine position. Then, after the patient’s position is changed to the left decubitus one and rethoracotomy is performed, the graft is pulled up through the anterior mediastinum, and is then passed into the right thoracic cavity via a small hole made in the anterior mediastinal pleura. The graft is then finally anastomosed with the remnant esophagus in the upper posterior mediastinum. Thereafter, microvascular anastomosis is performed in the retrosternal space through the skin incision in the supine position. Finally, the continuity of alimentary tract is completed.

Results: This new reconstruction procedure was performed for 4 patients with no significant postoperative complications, good swallowing function post-operatively, and no retention of food in the graft. There was no in-hospital death.

Conclusion: This novel trans-mediastinal reconstruction technique is a possible option in terms of enabling infrathoracic anastomosis and addition of microvascular anastomosis for highly selected gastrectomized patients with advanced age or a past history of HNC surgery.

Disclosure: All authors have declared no conflicts of interest.

Keywords: elderly gastrectomized patients, microvascular anastomosis, Esophageal cancer, novel esophageal reconstruction

PS01.189: A STUDY ON THE UTILITY OF INTRAOPERATIVE NEUROSTIMULATION MONITORING SYSTEM FOR RECURRENT LARYNGEAL NERVE IN ESOPHAGECTOMY

Fumikazu Kawanou, Shinsuke Takeno, Kourei Tashiro, Rouko Hamada, Yasuyuki Miyazaki, Syun Munakata, Takeomi Hamada, Takashi Wada, Kanjiro Nakamura, Atsushi Nanashima
University of Miyazaki Faculty of Medicine, Miyazaki/JAPAN

Background: Recurrent laryngeal nerve paralysis in esophagectomy is one of the most concerned complications. In recent years, intraoperative neurostimulation monitoring system (IONM) in thyroid surgery have been widespread for identification of recurrent laryngeal nerve and assessment of soundness. Therefore, IONM is often used during esophagectomy in Japan. In this study, we evaluated the efficacy of IONM in the patients undergoing esophagectomy.

Methods: Of 66 patients underwent esophagectomy since April 2015 until December 2017, IONM used in 27 patients in the surgery for the examination of recurrent nerve paralysis. We retrospectively reviewed these cases for intraoperative findings, neurostimulation monitoring findings and their outcomes.

Results: Of 27 patients, 25 were male and two were female, and the median age at operation was 66 years old. Although IONM was used in cervical lymph node dissection, there were no vocal cord responses in 5 patients (left side in 4 and right side in 1) with stimulation of the vagus nerve. Because all patients had no vocal cord paralysis due to stimulation of the cervical recurrent laryngeal nerve, it was diagnosed that there was the recurrent laryngeal nerve injury due to thoracic para recurrent nerve lymph node dissection. IONM was able to facilitate the identification and preservation of cervical recurrent nerve in all patients. Three out of 5 patients with no vocal cord response by IONM were confirmed recurrent laryngeal nerve paralysis in postoperative endoscopy. In patients with vocal cord paralysis by IONM, it was possible to carefully performed postoperative management. On the other hand, in patients without paralysis, extubation on the operation day seemed possible without the concern for aspiration.

Conclusion: By using IONM in esophagectomy, we were able to evaluate the damage of the recurrent laryngeal nerve in real-time. Confirming the intraoperative nerve injuries is important for postoperative management or prediction of postoperative aspiration pneumonia. IONM in esophagectomy was useful not only in terms of surgical procedures but also in the evaluation of postoperative management.

Disclosure: All authors have declared no conflicts of interest.

Keywords: esophagectomy, intraoperative neurostimulation monitoring, Recurrent laryngeal nerve

PS01.190: FLEXIBLE GASTRIC TUBE: A NOBLE METHOD OF GASTRIC TUBE RECONSTRUCTION WITHOUT ANASTOMOTIC LEAKAGE

Yasuuki Nakajima, Kenro Kawada, Yutaka Tokairin, Akihito Hoshino, Takuya Okada, Taio Ryokokuji, Masafumi Okuda, Yuichiro Kume, Yudai Kawamura, Kazuya Yamaguchi, Kazuyuki Kojima, Yusuke Kinugasa
Tokyo Medical and Dental University, Tokyo/JAPAN

Background: Anastomotic leakage is one of the most frequent and severe morbidity after esophagectomy. For preventing anastomotic leakage, it is important to design a gastric tube with sufficient blood supply and to perform precise anastomosis at a well-conditioned site. We herein show our method of gastric tube reconstruction and evaluate the outcome.

Methods: Seven hundred and forty-six esophageal carcinoma patients who received subtotal esophagectomy with gastric tube reconstruction via the retrosternal route between 1994 and 2017 were enrolled in the present study.