

Methods. In all, 81 consecutive patients who underwent radical esophagectomy without preoperative treatment for ESCC were examined. Total RNA was extracted from formalin-fixed paraffin-embedded samples and miR-X expression levels were evaluated. In this process, the miR-X levels were standardized against the RNU6B expression levels and were analyzed using the $\Delta\Delta Cq$ method. Clinicopathological features between high and low expression groups of miR-X were compared using the median expression level as the cutoff value. Prognostic analyses were performed using several factors, including miR-X expression levels, to gauge the cancer-specific (CSS) and recurrence-free survival (RFS) of these patients.

Results. High miR-X expression was found to be significantly related to deep invasion ($p < 0.001$) and high vascular invasion ($p < 0.001$). Prognostic analyses demonstrated the suitability of miR-X expression as a significant adverse prognostic factor both in cancer-specific and recurrence-free survival ($p = 0.006$ & $p = 0.004$, respectively) of patients. Multivariate analysis using factors such as T- and N-factors, tumor size and miR-X expression levels indicated that the miR-X level was an independent prognostic factor as well as T-factor (CSS, hazard ratio: 2.263, $p = 0.034$), and T- and N-factors (RFS, hazard ratio: 2.22, $p = 0.033$).

Conclusion. The present study revealed that high miR-X expression was related to deep invasion and high vascular invasion in ESCC. It was also independent adverse prognostic factor for patients with ESCC. Detailed examination including in vitro re-verification is required because these results were inconsistent with previous reports and miR-X might play different roles in clinical settings. In any case, further detailed studies might establish the significance of miR-X as a novel and useful biomarker of ESCC.

83 10-YEAR CHANGES IN DIETARY HABITS AND MEDICAL KNOWLEDGE OF ESOPHAGEAL CANCER IN A HIGH-INCIDENCE AREA: A POPULATION-BASED STUDY

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Yanting was reported as a high-incidence area of EC with an unclear etiology. Many preventative measures and control policies have been performed during recent years in Yanting County, but no study has examined the changes in dietary habits and medical knowledge of EC during this decade. This study aimed to compare the differences in dietary habits, food group intake and medical knowledge of EC among residents of Yanting between 2007 and 2017.

Methods. Using a self-designed questionnaire, we investigated rural residents from Yanting county in the year 2007 and 2017. The 10-year changes of demographic features, personal dietary habits, food groups and medical knowledge of EC were compared. The results were then statistically analyzed. This study is based on a household survey of 570 and 898 rural residents aged 18+ years from Yanting County conducted in 2007 and 2017, respectively.

Results. Participants in the year 2007 were more likely to consume foods of lower toughness, have a slower speed of eating, have hotter temperature food, and have rice as a staple food less often ($P < 0.05$). Residents in the year 2007 ate more preserved foods but fewer fresh foods than those in the year 2017 ($P < 0.05$). Participants in the year 2017 improved their medical knowledge compared to those in the year 2007, which was conceptualized as a clear understanding of medical insurance for EC, common causes of EC, therapeutic measures for EC, preventive measures for EC, and government interventions ($P < 0.05$).

Conclusion. Although the medical knowledge of participants in year 2017 have changed a lot, most of them also never head of detail knowledge on EC. Residents in the year 2017 had healthier dietary habits and better medical knowledge of EC than those in the year 2007, while prevention and control measures in Yanting should be strengthened persistently.

91 SIMPLE, HIGHLY SENSITIVE CLINICAL PREDICTION SCORES FOR RULING OUT ESOPHAGEAL ADENOCARCINOMA IN PATIENTS WITH BARRETT'S ESOPHAGUS

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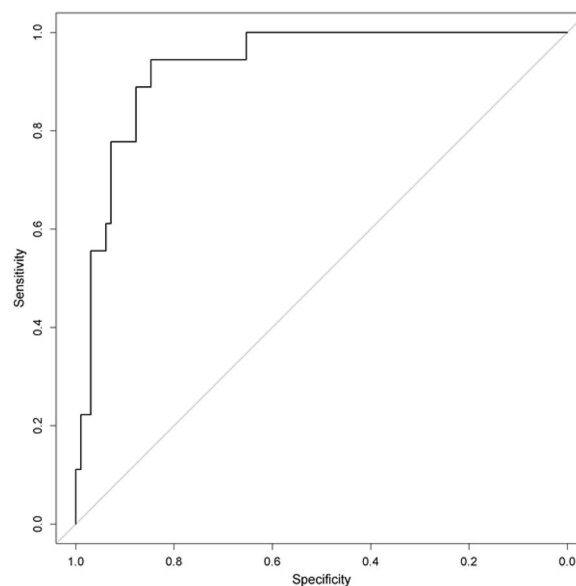
Barrett's Esophagus (BE) is a risk factor for development of Esophageal Adenocarcinoma (EAC). Detection of EAC at an earlier stage is known to improve patient outcomes, but only a very small proportion of patients with

BE will progress to EAC. Even in the context of established risk factors, it is difficult to rule out EAC in patients with BE prior to or during endoscopy.

Methods. We performed a retrospective chart review of all patients with non-dysplastic BE, dysplastic BE and EAC diagnosed at St. Paul's Hospital from 2012–2016 to investigate patient characteristics that would establish a risk score to discriminate patients with EAC from those without EAC.

Results. 132 patients were identified. Patients with EAC had higher rate of smoking history (52.4% vs. 20.7%, $p = 0.002$), higher rate of prior malignancy (33.3% vs. 8.1%, $p = 0.001$), older mean age (71.0 \pm 8.3 vs. 61.3 \pm 12.2, $p = 0.001$), greater frequency of carcinoid malignancy (9.5% vs 0.0%, $p = 0.024$), greater incidence of family history of breast cancer (22.2% vs. 6.2%, $p = 0.027$) and lung cancer (23.5% vs. 4.1%, $p = 0.004$) and greater rate of endoscopic mucosal irregularity (85.7% vs. 28.8%, $p < 0.001$). A clinical risk score to discriminate between patients with EAC from those without EAC had an AUC of 0.90 and NPV of 0.97.

Conclusion. We have devised clinical risk scores that could be used Risk scores, in combination with established factors such as degree of dysplasia, may help triage patients with BE appropriately with regards to timing of endoscopy. By ruling out EAC and in low risk patients, high risk patients might be monitored more carefully which could lead to earlier detection of EAC and improved patient outcomes.



95 DIRECT ORAL FEEDING AFTER A MINIMALLY INVASIVE ESOPHAGECTOMY: A SINGLE-CENTER PROSPECTIVE COHORT STUDY

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A recent randomized controlled trial showed the safety and feasibility of direct oral feeding following a minimally invasive esophagectomy (MIE). However, significant differences were found regarding complication rate between hospitals, potentially influencing the effect of direct oral feeding. This study aimed to investigate the effect of direct oral feeding compared to the standard of care in a center with low anastomotic leakage and overall complication rates following a MIE.

Methods. Patients in this single-center prospective cohort study received either direct oral feeding (intervention group) after a MIE with intrathoracic anastomosis or nil-by-mouth for 5 days postoperative and tube feeding (standard of care). Primary outcome was time to functional recovery—defined as adequate pain control with oral analgesics, recovery of mobility, sufficient caloric intake, no intravenous fluid therapy and no signs of active infection—and length of hospital stay. Secondary outcomes included anastomotic leakage, pneumonia, cardiopulmonary complications and other (surgical) complications.

Table 1. Time from isophagectomy o functional recovery and length of hospital day.

	Direct oral feeding	Standard of care	p-value
Intention-to-treat analysis	N=84*	N=109**	
Functional recovery, days	7 [6-9]	9 [6-16]	<0.001
Length of hospital stay, days	8 [7-10]	10 [7-18]	<0.001
Per-protocol analysis	N=59	N=65	0.118
Functional recovery, days	6 [5-7]	7 [6-8]	0.037
Length of hospital stay, days	7 [6-9]	8 [7-9]	0.024

Legend Values are median [lower quartile - upper quartile]. *One patient was discharged home with palliative care due to disease progression and did not meet functional recovery criteria. **Two patients died during hospital admission (Clavien-Dindo grade V) and were therefore not able to achieve functional recovery.

Results. Baseline characteristics were similar in the intervention (n = 85) and control (n = 111) group. Median time to functional recovery was respectively 7 versus 9 days in the intervention and control group (p < 0.001). Median length of hospital stay was respectively 8 versus 10 days in the intervention and control group (p < 0.001). Thirty-day postoperative complications were significantly lower in the intervention group (p = 0.037). Anastomotic leakage and pneumonia rates did not differ between the intervention and control group (respectively 11.8% vs. 10.8%, p = 0.834; 27.1% vs. 33.3%, p = 0.651). Chyle leakage only occurred in the control group (18.9%, p < 0.001). All other postoperative complications were similar between groups.

Conclusion. Direct oral feeding in a center with a low postoperative complication rate after a MIE results in a reduced time to functional recovery and a shorter length of hospital stay. Importantly, the 30-day postoperative complication rate was significantly lower in patients directly starting oral feeding.

106 THE HYBRID POSITION IS SUPERIOR TO THE PRONE POSITION FOR THORACOSCOPIC ESOPHAGECTOMY WITH UPPER MEDIASTINAL LYMPHADENECTOMY

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Thoracoscopic esophagectomy (TE) is becoming a common surgical method for esophageal cancer. TE is performed with the patient the left lateral decubitus position, prone position, or hybrid position combining the left lateral decubitus and prone positions. However, only few studies have compared the clinical utility of these TE positions.

Methods. In our institute, we introduced TE in the prone position (prone TE) in 2014, and have performed TE in the hybrid position (hybrid TE) since March 2017. The present study compared the short-term outcomes of prone TE versus hybrid TE. One-hundred-and-three patients with esophageal or esophagogastric junction cancer who underwent TE between March 2014 and December 2019 were included. Patients were divided into those who underwent prone TE (prone TE group; n = 43) and those who underwent hybrid TE (hybrid TE group; n = 60). Clinicopathological data were retrospectively reviewed and compared between groups.

Results. There were no differences between groups in age, tumor histology, and tumor location. Compared with the hybrid TE group, the prone TE group had a smaller tumor depth (P < 0.001), lower grade of lymph node metastasis (P = 0.003), and less severe tumor stage (P = 0.001). The operation time for the thoracoscopic procedure was shorter in the hybrid TE group (318.9 vs 249.2 min, P = 0.002). The rate of recurrent laryngeal nerve paralysis (Clavien-Dindo grade I-III) was significantly lower in the hybrid TE group (41.9% vs 11.7%, P < 0.001), whereas there were no differences between groups in the rates of anastomotic leakage, atelectasis, or pneumonia.

Conclusion. The most significant differences between prone TE and hybrid TE involved the upper mediastinal procedures. In hybrid TE, the motion of the assistant's forceps causes less interference with the operative field, and the angle at which the operator's forceps approach the upper mediastinal lymph

nodes enables the maintenance of appropriate traction. These advantages of hybrid TE appeared to result in a shorter operation time and less recurrent laryngeal nerve paralysis compared with prone TE.

114 VATS ESOPHAGECTOMY: DOES PATIENT OPERATIVE POSITION DURING THORACOSCOPIC MOBILISATION INFLUENCE OUTCOMES? A PROSPECTIVE COMPARATIVE STUDY

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VATS esophagectomy can be done in lateral, prone and semiprone positions. Present evidence available comparing semiprone with lateral position is retrospective. We have conducted this study to provide prospective data on perioperative outcomes in patients undergoing Video Assisted Thoracoscopic (VATS) esophagectomy in Semiprone (SP) and Lateral decubitus position (LP) in a single centre.

Methods. 48 patients (SP =24 & LP =24) undergoing VATS esophagectomy (2017 to 2019) were analysed. Preoperative details (tumor characteristics, preoperative treatment and pulmonary function test), intraoperative details [operative time, blood loss, mean EtCO₂, arterial blood gas analysis (ABG) at the end of one lung ventilation(OLV), number of ports used, need for lung reinflation and retraction] and postoperative details [duration of ICU stay, cardiovascular and respiratory complications, pain scores (VAS) and tidal volume improvement (spirometry reading) on first five postoperative days, circumferential resection margin (CRM) status, total and recurrent laryngeal nerve (RLN) nodal yield were noted.

Results. Preoperative data in both arms were comparable. Ports used (5 vs 3, p < 0.0001), need for lung retraction (22 vs 4patients, p < 0.0001), duration of ICU stay (2 days vs 1 day, p = 0.0327), spirometry readings for POD 1st-5th (p < 0.05) and pain scores (p < 0.05) for POD 1st-5th was significantly less in SP group. There were fewer respiratory complications in SP group (10 vs 4, p = 0.110). LP group had shorter duration of surgery (3.7 vs 4.2 hours, p = 0.0398). There were no differences in tumor characteristics, blood loss, ABG at the end of OLV, mean EtCO₂, lung reinflation rate, cardiovascular complications, CRM involvement, total and RLN nodal yield.

Conclusion. Similar oncological clearance was achieved by both techniques of esophageal mobilization. Semiprone position is associated with lesser postoperative pain and better preservation of respiratory function.

120 LYMPHADENECTOMY ALONG THE LEFT RECURRENT LARYNGEAL NERVE AFTER ESOPHAGEAL STRIPPING.

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The working space in the upper mediastinum is limited and lymphadenectomy along the left recurrent laryngeal nerve is difficult and anastomosis by a circular stapler in the narrow neck field is also difficult in VATS-E. We report our technique of the lymphadenectomy along the left recurrent laryngeal nerve.