Conclusion: In patients undergoing transthoracic esophagectomy for cancer, the addition of paratracheal lymphadenectomy results in a higher lymph node yield with comparable complication and mortality rates.

P103 A HAND-SEWN INTRATHORACIC ANASTOMOSIS IN ROBOT-ASSISTED MINIMALLY INVASIVE ESOPHAGECTOMY (RAMIE): A DETAILED DESCRIPTION OF TECHNIQUE AND OUTCOMES

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Aim: The aim of this study was to describe a technique that was developed and refined to construct a hand-sewn intrathoracic anastomosis during robot-assisted minimally invasive esophagectomy (RAMIE).

Background and Methods: Whilst some case series have reported promising results of a hand-sewn intrathoracic anastomosis during RAMIE, the exact techniques were often not described in detail. Therefore, the current single-center retrospective study was designed to provide a detailed and reproducible technical description of a hand-sewn, intrathoracic anastomosis that was developed and refined for patients who underwent RAMIE in a high volume center for esophageal cancer surgery (2016-2018). Video recordings were reviewed to evaluate technical details regarding the anastomosis, including number of sutures and distances between the anastomosis and the longitudinal staple line or gastric conduit tip. Technical details and distances were extracted and measured by using video analysis software. Moving average analyses were performed to evaluate whether the anastomotic leakage rate changed over the consecutive cases.

Results: A total of 68 patients were included in the study. For creation of the anastomosis, the gastric conduit was opened on a median distance of 19 millimeters (range 0-66) from the gastric conduit tip. After initially performing end-to-end anastomoses, a switch was made to an end-to-side anastomosis for the majority of 55 patients (81%). A median total of 27 sews (range 20-38) were required to close the anastomosis. In the last 22 patients of the cohort (32%), 4 tension release stitches were placed after circular suturing of the anastomosis. A re-inforcing omental wrap was positioned around the anastomosis in 64 patients (94%). The moving average curve for anastomotic leakage started at a rate of 40% (cases 1-10) and ended at 10% (cases 59-68).

Conclusion: This is the first study to report technical features and outcomes of a hand-sewn intrathoracic anastomosis during RAMIE in detail. Although an acceptable anastomotic leakage rate was observed in the final inclusion phase, a hand-sewn intrathoracic anastomosis during RAMIE may carry a substantial learning curve.

P104 SELECTIVE LYMPHATIC EMBOLIZATION TO MANAGE SEVERE POSTOPERATIVE LYMPHATIC LEAK

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Aim: To describe methods and clinical outcomes in a cohort of patients at Uppsala University Hospital who underwent selective lymphatic embolization due to severe lymphatic leak.

Background and Methods: Surgery for malignant disease with extensive lymph node dissection in the abdomen or thorax can be complicated by postoperative lymphatic leak. This is a relatively rare condition, associated with great morbidity and can be difficult to treat. Selective embolization of leaking lymphatic vessels is a recently introduced method for management of thoracic and abdominal lymphatic leaks.
Patients that had undergone treatment with selective embolization for severe lymphatic leaks were studied retrospectively. Lymphatic leaks were diagnosed with dynamic contrast enhanced magnetic resonance imaging (MRI)-lymphangiography and/or nodal lymphangiography utilizing Lipiodol. Selective embolization of leaking lymphatic vessels was performed in local anesthesia through transabdominal access, selective catheterization of lymphatic vessels with microcatheters, followed by occlusion of the vessel with coils and glue. Alternatively the leaking lymphatic vessel was occluded by injection of Lipiodol or Fibrovein via an adjacent lymph node. Data was analyzed with descriptive statistics.

Results: The study comprised 14 patients with severe postoperative lymphatic leak (six following transthoracic esophageal resection and eight following abdominal resections). Prior to intervention the average daily lymph output was 2092 ml and average serum albumin was 19 g/l (range 7-27). Median time from primary surgery to selective embolization was 73 days indicating that conservative treatment had previously been tried and failed. Selective embolization was successful in 93% (n=13) and in nine patients the lymphatic leak ceased instantly. A few patients needed more than one embolization procedure.
Median time in hospital care after embolization was two days. No procedure-related complications occurred and only one patient later needed open surgery due to persisting lymphatic leakage.

Conclusion: Selective lymphatic embolization appears to be a safe and effective method with potential to preclude open surgery in patients with persistent severe postoperative lymphatic leak. The procedure can be performed under local anesthesia but demands a highly skilled and dedicated interventional radiologist. The most detailed imaging to facilitate the procedure was achieved through dynamic contrast enhanced MRI-lymphangiography.

P105 MIRNA483-3P AND MIRNA221 DYSREGULATION AND CORRELATION WITH SURVIVAL IN ESOPHAGEAL ADENOCARCINOMA (EAC)

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Aim: Our study aimed to characterize miR-221 and 483-3p dysregulation and to correlate their expression with clinical outcomes in patients submitted in first instance to surgical therapy (naïve patients) for esophageal adenocarcinoma (EAC).

Background and Methods: MicroRNA (miRNAs) are small, noncoding RNAs that play important roles in several biological processes by fine-tuning gene expression1. In a cohort of well-characterized EAC, we analyzed the expression of miRNAs. RNA was extracted from formalin-embedded (FFPE) surgical specimens of normal gastric tissues and EACs, classified according to BIM/GIM classification (BIM=Barrett's intestinal metaplasia, GIM=Gastric intestinal metaplasia): 43 BIM-/GIM-, 32 BIM+/GIM-, 2 BIM+/GIM+, 9 BIM-/GIM+). Expression of 754 human miRNAs was profiled in 8 cases with TaqMan MicroRNA Array card A1.1/B3.0. miR-221 and 483-3p validation was performed with single TaqMan probes on all 85 FFPE samples. miR-221 and miR-483-3p were also analyzed in a cohort of 39 fresh-frozen biopsies (29 EAC and 10 normal esophageal tissues). In 3 EAC cell-lines (OE-19, OE-33, FLO-1)2 we tested the expression of miR-221 and miR-483-3p3 and of two major targets (*PTEN* and *SMAD4*, respectively). Correlations between miRNAs and clinical outcomes were calculated using Kruskal-Wallis, Mann-Whitney, t-Student's and Kaplan-Meier tests.

Results: miR-221 and 483-3p resulted upregulated from the MicroRNA Array card analysis. This increase was confirmed in two independent cohorts (FFPE-cohort: miR-483-3p p=0.0065; fresh-frozen-cohort: miR-483-3p p<0.0001, miR-221 p=0.0062). Statistical analysis showed an upregulation of both miRNAs, in particular miR-483-3p (p<0.0001), in BIM-/GIM-, compared to BIM+/GIM-. miR-221 and 483-3p up- regulation correlated with reduced cancer-specific survival in FFPE samples (miR-483-3p p=0.053, miR-221 p=0.001). We demonstrated a significantly increase for miR-483-3p (p=0.01) with a trend toward reduction of *SMAD4* expression in FLO-1 compared to other cell-lines.

Conclusions: We identified an up-regulation of miR-221 and miR-483-3p, which might contribute to cancer progression. In the most aggressive cell line, FLO-1, we observed an increased expression of miR-483-3p, with *SMAD4* reduction. Further studies are warranted to elucidate in depth the role of miR-221 and miR-
483-3p in EAC.

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P107 PREDICTION OF A POSITIVE CIRCUMFERENTIAL RESECTION MARGIN IN ADENOCARCINOMA OF THE ESOPHAGUS

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