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on average 26.4 (range 10-55) minutes to complete. The fastest quartile of patients completed the six questionnaires in 17 minutes or less (N=14). There was no significant association between time to complete the questionnaires and age, gender, time from surgery or health-related quality of life scores.

Conclusions: The results of the study demonstrates that online questionnaires in some ways might be superior to paper questionnaires, and that patients are willing and able to complete online questionnaires irrespective of age. Time to complete questionnaires was not associated with level of health-related quality of life.

### P217 SAFETY OF ESOPHAGEAL DILATION IN PATIENTS WITH EOSINOPHILIC ESOPHAGITIS IN A SINGLE CENTER COHORT

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**Aim:** This study is aimed to assess the safety of esophageal dilation (ED) in a large cohort of eosinophilic esophagitis (EoE) cases in a single center.

Background and Method: EoE, the leading cause of food impaction, is a chronic immune-mediated disorder characterized by esophageal dysfunction and mucosal eosinophilic infiltration (≥ 15 eos/hpf). ED is considered a second-line therapy for EoE after failure of medication, due to concern of perforation.

We performed a retrospective review of EoE patients who received ED at University of Iowa Hospitals and Clinics from 2006 to 2018. ED types, complications, and symptomatic improvement were extracted via chart review. Descriptive statistic with univariate analysis was performed.

**Results:** Of 1050 EoE patients, 160 received 295 EDs, ranging from 1-12 dilations per patient, with 67 patients requiring >1 dilations. Procedures were generally well-tolerated, without major bleeds or perforations. The overall complication rate was 6.1%, mostly post-procedural chest pain (4.8%). Three patients had sedation-related complications: one aspiration pneumonia and two ICU admissions for respiratory distress. Symptomatic improvement was documented in 87% of dilations on follow up.

Conclusion: EoE prevalence is increasing with rates of 1 cases per 1000 individuals, with up to one-third requiring ED for symptomatic relief. Previous reports suggested an increased procedure-related risk, mainly esophageal perforation. However, recent systematic reviews have shown low perforation rate of <0.3%, approximating that of other benign conditions. Our findings are consistent with current data, suggesting that ED should be considered a safe treatment for EoE along with dietary and pharmacological interventions.

# P219 THE ROLE OF PET-CT IN THE EVALUATION OF LYMPH NODE INVOLVEMENT IN ESOPHAGEAL AND GASTROESOPHAGEAL JUNCTION CARCINOMA - A 5-YEAR SINGLE CENTER EXPERIENCE.

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**Aim:** To determine the efficacy of positron emission tomography-computed tomography (PET-CT) in the evaluation of lymph node status during preoperative staging on patients with esophageal and gastroesophageal junction carcinoma compared to the final histopathological findings.

Background and Methods: Data on patients that underwent esophagectomy from 01/03/2014 to 01/03/2019 were prospectively collected and retrospectively reviewed. Based on the medical records, the following parameters were extracted and analyzed: patient demographics, histopathological parameters, surgical and oncological outcomes. All patients were staged according to the AJCC 8th edition.

**Results:** A total of 79 patients underwent Ivor Lewis or McKeown esophagectomy for either squamous cell carcinoma (n= 7 patients) or adenocarcinoma of esophagus or gastroesophageal junction (n= 72 patients). In 60 cases, clinical staging was conducted without performing PET- CT, while 19 cases underwent PET-CT. Among the 19 patients, 16 (84.2%) were men, and 3

(15.8 %) were women. Mean age was 62 years, (range 41-72). Mean nodal harvest per patient was 30.6 lymph nodes. Twelve out of 19 patients (63.2%) revealed lymph node invasion, with a mean of 5.6 positive lymph nodes per patient. PET-CT identified the primary tumor in all 19 patients (100%). PET-CT demonstrated 100% compliance with the final histopathological reports regarding N status in only 5 out of 19 cases (26.3%). Four patients were staged as N0 both pre- and postoperatively, while one was deemed positive by PET-CT in right paracardial lymph nodes which was histopathologically confirmed. In other 4 patients (21.1%), PET-CT was 100% false negative, whereas in 3 patients (15.8%) PET-CT was 100% false positive. In the remaining 7 patients, PET-CT findings were in accordance with the pathology report in 7 out of 25 examined lymph node stations, false positive in 9 out of 25 and false negative in 9 out of 25 must be sufficiently as the stations of the pathology report in 7 out of 25 examined lymph node stations, false positive in 9 out of 25 and false negative in 9 out of 25 must be sufficiently as the sufficient of the pathology report in 7 out of 25 examined lymph node stations, false positive in 9 out of 25 and false negative in 9 out of 25 must be sufficiently as the sufficient of the pathology report in 7 out of 25 examined lymph node stations, false positive in 9 out of 25 and false negative in 9 out of 25 must be sufficiently as the sufficient of 10 must be sufficiently as t

**Conclusion:** PET-CT seems to have a considerable number of false positive and false negative results in esophageal cancer in our study as far as N-staging is concerned. Further studies with larger sample size are needed to reach more conclusive results.

## P220 DEVELOPMENT OF A NEW PSYCHOLOGICAL TOOL TO IMPROVE PATIENT ABILITIES TO DEAL WITH ESOPHAGECTOMY: PRELIMINARY RESULTS

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**Aim:** This study aims to create a tool for evaluation of patient ability to deal with postoperative course after esophagectomy for cancer.

Background and methods: Esophagectomy requires patient to be active and compliant to face up to postoperative impairments. Health related quality of life (HRQoL) data in short and medium-term after surgery show that competences used by patients are not appropriate. Lack of patient abilities to manage postoperative course influences patient recovery and reduces HRQoL.

Psychological analysis of patient clinical needs was conducted to identify peculiar patient competences involved after esophagectomy. Four competences (future forethought; context evaluation; consequences of own actions forethought; use of available resources), each relevant to four areas (clinical; familiar; working; daily-activities) were identified and converted in openended questions to assess patient level of skills: a 16 questions structured interview was composed.

From April to June 2019 we performed a feasibility study on 18 consecutive patients between 3rd and 15th postoperative day. They underwent esophagectomy for esophageal or esophagogastric junction cancer in two high volume centers. Patients with metastasis, with language problems due to neurological impairment or age <18 were excluded. M.A.D.I.T.-Methodology of Computerized Textual Data Analysis (University of Padua) was used.

**Results:** Each interview was administered orally to all patients and took 15 minutes. 5 questions were asked to be repeated. No complaints or negative comments were received.

Non-responding percentage was 0,4% (one question in one interview). Textual corpus was composed of 3210 words, passable of analysis. No differences between postoperative days administration were found.

M.A.D.I.T. analysis showed that answers were adequate and pertinent and allowed us to stratify patients in three different levels of competences (low, median, high). No need of additional competences or areas was observed.

**Conclusion:** This new psychological tool shows content validity, adequacy and pertinence to the study aim. It is understandable, easy, quick to be answered during any postoperative day and useful to identify patients with low abilities to deal with esophagectomy.

Therefore a multicentric study will be conducted to use this tool further in multiple-choice format with a larger number of patients, in order to identify which patients will benefit of psychological intervention for HRQoL improvement.



A. Patient demographic n, %	
105 (65 (201)	
Male 105 (65.62%)	
Age, yr (mean) $45.5 \pm 15.6$	
Atopy history 83 (51.88%)	
Treatment prior to dilation	
High dose PPI 50	
Low dose PPI 38	
Swallowed glucocorticoid 19	
Systemic glucocorticoid 4	
Leukotriene inhibitors 16	
Age at first dilation, yr (mean) $38.7 \pm 15.2$	
B. Dilation characteristic number (%)	
Total dilations 295	
Method	
Savary 241 (81.69%)	
Through the scope balloon 53 (17.97%)	
Maloney 1 (0.34%)	
Diameter, mean (mm)	
Initial diameter* 12.99	
Final diameter* 16.11	
Change in diameter 3.05	
Initial dilation by advanced endoscopist 16.5	
Initial dilation by general endoscopist 14.7	
Days to maximum diameter $825.9 \pm 1050$	
C. Outcomes	
Laceration/rent 96/295 (32.54%)	
Documented improvement 141/162 (87.04%)	
Days to follow up (median) $37 \pm 72.96$	
Dilations without follow up 133 (45.08%)	
D. Procedure-related complication	
Post-procedural chest pain 14 (4.75%)	
Bleeding** 0 (0%)	
Perforation 0 (0%)	
General medicine admission 2 (0.68%)	
ICU admission 2 (0.68%)	

<sup>\*</sup> This was calculated for 43 patients who underwent > 1 dilatation with increase in dilation diameter compared to index dilation. 24 patients had a relatively decreased or maintained the same dilation diameter compared to index dilatation event.

<sup>\*\*</sup> Bleeding was defined as significant to require an intervention by endoscopist.

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### P221 THE ROLE OF SUBCARINAL LYMPH NODE DISSECTION IN ESOPHAGECTOMY - A 5-YEAR SINGLE CENTER EXPERIENCE

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**Aim:** To evaluate the involvement of subcarinal lymph node dissection (SLND) in the surgical treatment of esophageal cancer, as well as its impact on surgical outcomes following esophagectomy.

Background and Methods: Data on patients that underwent esophagectomy from 01/03/2014 to 01/03/2019 were prospectively collected and retrospectively reviewed. Based on the medical records, the following parameters were collected and analyzed: patient demographics, histopathological parameters, surgical- oncological outcomes. All patients were staged according to the AJCC 8th edition.

Results: A total of 79 patients underwent Ivor Lewis or McKeown esophagectomy for either squamous cell carcinoma (n= 7 patients) or adenocarcinoma of the esophagus or gastroesophageal junction (n= 72 patients). In 26 cases, esophagectomy was performed without SLND, while 53 cases underwent SLND. Among the 53 patients, 50 (94.3%) were men, and 3 (5.7 %) were women. Mean age was 61.4 years, (range 34-78). Mean nodal harvest was 34.7 lymph nodes per patient. Lymph node invasion was noted in 33 patients (62.2%), with a mean of 9 positive lymph nodes per patient. Subcarinal lymph nodes were involved in 5 out of 53 patients (9.4%). The ratio of positive subcarinal lymph nodes to resected ones was 1/2 (50%), 3/3 (100%), 1/2 (50%), 1/2 (50%) and 1/1 (100%) for each patient. Final histopathological report showed adenocarcinoma of moderate or poor differentiation (G2 2/5, G3 3/5) in all five patients (100%). Four out of 5 patients had not received neoadjuvant treatment and their pathological staging was T3N3M0. One patient had received neoadjuvant chemotherapy and his final staging was ypT3N2M0. Noteworthy, the seven patients diagnosed with squamous carcinoma, were subjected to SLND and were 100% negative for invasion histologically.

**Conclusion:** Subcarinal lymph nodes were infiltrated in 9.4% of patients operated for esophageal cancer. In the squamous cell cancer group, the relative infiltration rate was notably 0%. It seems that omission of subcarinal lymph node dissection during transthoracic esophagectomy cannot be justified.

## P222 EVALUATION OF SINGLE- NUCLEOTIDE POLYMORPHISMS IN ESOPHAGEAL CARCINOMA PATIENTS IN GREECE- PRELIMINARY RESULTS OF A CASE CONTROL STUDY

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Aim: The incidence of various single- nucleotide polymorphisms with reported malignant potential in esophageal cancer tissues has only sparsely been investigated in the west, as of today. The aim of our study was to investigate the contribution of four lncRNAs' polymorphisms HOTAIR rs920778, LINC00951 rs11752942, POLR2E rs3787016 and HULC rs7763881c in esophageal carcinoma susceptibility.

Background and Methods: Formalin-Fixed Paraffin-Embedded (FFPE) tissue specimens from 95 consecutive patients operated for esophageal or gastro-esophageal junction carcinoma between 01/03/2014- 01/03/2019 were retrieved and processed. Clinical data concerning patients' demographics, histopathological parameters, surgical, and oncological outcomes were also retrospectively collected from our prospective database. DNA findings concerning rs920778, rs11752942, rs3787016 and rs7763881 of the above mentioned population were compared with 121 healthy controls.

Results: Sixty-seven patients underwent Ivor Lewis or McKeown esophagectomy for either squamous cell esophageal carcinoma (n= 5) or adenocarcinoma of esophagus or gastroesophageal junction Siewert I or II (n= 62). Twenty-eight additional patients were subjected to total gastrectomy for gastroesophageal junction adenocarcinoma Siewert III. Neither HOTAIR rs920778 nor LINC00951 rs11752942 nor HULC rs7763881 polymorphism was found more frequently in esophageal cancer specimens in comparison to healthy subjects. On the contrary, the presence of C allele, as well as CC/TT genotypes of POLR2E rs3787016 were found more often in the control population, and when found in esophageal cancerous tissues it was associated with earlier stages of the disease, as well as with minor lymph node involvement and lesser metastatic potential.

**Conclusion:** The presence of POLR2E rs3787016 seems to be less common in esophageal cancer patients than healthy controls and is also associated with early stage disease. The clinical implications of this finding need to be clarified with further studies with larger sample size.

#### P223 BILATERAL RECURRENT LARYNGEAL NERVE LYMPHADEN-ECTOMY DURING THORACOSCOPIC ESOPHAGECTOMY IN PRONE POSITION

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**Aim:** To present a video of a complete bilateral recurrent laryngeal nerve lymphadenectomy performed during minimally invasive esophagectomy using thoracoscopic video-assisted surgery in the prone position.

Background and Methods: Surgical treatment for esophageal cancer needs detailed lymphadenectomy. Indeed, the number of surgically dissected lymph nodes is important for staging accuracy and also determines patient's prognosis, including those along the recurrent laryngeal nerve. However, recurrent laryngeal nerve dissection remains difficult and increases the appearance of postoperative complications.

This is a video of a bilateral recurrent laryngeal nerve lymphadenectomy during thoracoscopic esophagectomy performed in the prone position in a female patient with esophageal cancer.

Results: A 75 year-old female was diagnosed with recurrent squamous cell middle third esophageal carcinoma. The patient had first been diagnosed eleven years ago, receiving chemoradiotherapy as a radical treatment. The patient achieved a complete response after treatment, which remained for eleven years. Eleven years later, during routine follow-up, tumor recurrence was identified in the middle third of the esophagus. After presentation in a Multidisciplinary Group the patient underwent minimally invasive McKeown esophagectomy.

First, a video-assisted thoracoscopic surgery was performed in the prone position to mobilize the thoracic esophagus and complete a detailed mediastinal lymph node dissection, including infra-carinal lymph nodes, bilateral bronchial lymph nodes and also bilateral recurrent laryngeal nerve lymph nodes.

Afterwards, the abdominal esophagus and lymph node dissection is performed using a laparoscopic approach, and also a left cervicotomy in the supine position. An assistance laparotomy was made to externalize the specimen and make the gastric conduit. A manual end-to end esophagogastric anastomosis was executed and finally, a feeding jejunostomy tube was placed.