with increased rates of postoperative complications. Future studies regarding the optimal time interval between the completion of neoadjuvant chemoradiation and esophagectomy need to consider the specific reasons for delay to surgery.

561. VIDEO ASSISTED THORACOSCOPIC ESOPHAGECTOMY WITH ABERANT VASCULAR ANATOMY

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Aberant right subclavian artery is an important vascular anomaly for upper mediastinal dissection in esophagectomy.

We encountered a patient with this aberrant vascular anatomy, which was identified in preoperative CT scan. Operative video was taken in the consent of patient and saved for further educational purpose.

This was a 67 years old man with advanced middle thoracic esophageal tumour. Biopsy confirmed squamous cell carcinoma. He underwent tri-modality treatment after multidisciplinary team discussion. Neoadjuvant chemoradiotherapy was completed 6 weeks before the surgery.

The patient underwent minimally invasive McKeown esophagectomy with complete mediastinal dissection. The patient was put in semiprone position with bronchial block for one lung ventilation. The aberrant anatomy was successfully identified intraoperatively, and the operation was uneventful. The total operative time was 6 hours 39 mins and the total blood loss was 120ml. The patient ran an uneventful recovery and was discharged on postoperative D10.

To be able to acknowledge this unusual anatomy in preoperative imaging and clearly identify it intraoperatively are the keys to prevent inadvertent injury and massive bleeding.

562. PROGNOSTIC IMPACT OF CLINICOPATHOLOGICAL FEATURES FOLLOWING METASTECTOMY FOR METACHRONOUS PULMONARY METASTASIS FROM ESOPHAGEAL CANCER: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Disease recurrence following treatment for esophageal cancer (EC) remains common despite incremental gains from receipt of neoadjuvant chemotherapy. The lung is a common site of distant metastasis following definitive EC treatment. Clinicopathological features of the primary EC tumour have implications on the development of metastatic disease and overall survival. This systematic review sought to identify the prognostic impact of clinicopathological features of the primary esophageal tumour following treatment of metachronous pulmonary metastasis from EC.

A search of the major reference databases (PubMed, Medline, Cochrane) was performed with no time limits up to March 2022. Results were screened in line with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. Studies reporting on the clinical and pathological features of the primary EC tumour among patients undergoing treatment for metachronous pulmonary metastasis were included. A random effects meta-analysis model was used to compare the impact of gender (male vs female), primary EC pathological T-stage (pT1/2 vs pT3/4) and pathological N-stage (N0 vs N1+), on 5-year survival following pulmonary metastectomy.

Seven non-randomised studies comprising 110 patients undergoing pulmonary metastectomy for metastic EC were included. Gender did not have an impact upon 5-year survival (Risk Ratio (RR) = 0.65; 95% confidence interval (CI):0.37-1.15; p=0.14). A lower primary EC T-stage (T1/2) was associated with improved 5-year survival following pulmonary metastectomy compared to advanced T-stages (T3/4), though this did not reach statistical significance (RR = 1.76; 95% CI:1.09-2.03; p=0.07). The absence of nodal disease (N0) in the primary EC tumour did not confer a survival benefit over those patients with nodal involvement disease (N1+), proceeding to pulmonary metastectomy (RR= 1.45; 95% CI:1.08-2.06; p=0.18).

Patient gender and pathological T- and n-stages of the primary tumour do not impact upon prognosis following metastectomy for metachronous pulmonary metastasis from EC. However, current evidence from smaller non-randomised studies remains weak owing to variation in the treatment of the primary EC, limiting outcome assessment.

563. MAGNETIC DETECTION OF ESOPHAGEAL SENTINEL LYMPH NODES – A PROOF OF CONCEPT STUDY IN A PORCINE MODEL

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Superparamagnetic iron oxide particles (SPIONs) have been used to mark sentinel lymph nodes in breast and prostate cancer surgery. Their suitability for other tumor entities remains unclear. In esophageal surgery, the future focus may shift to tailored lymph node resection to reduce the extent of surgery and to minimize perioperative complications. Still, there are very few tracers available to detect draining lymph nodes. In this study, we investigated the suitability of SPIONs for this issue.

Seven male piglets underwent surgery and SPIONs were injected into the esophageal wall. The distribution of the tracer into the adjacent local lymph nodes was investigated by a magnetometer over 120 minutes. Then, the specimens were harvested and examined histologically.

SPIONs were detected in all cases in the draining lymph nodes within the first 5 minutes after injection reaching a positive magnetic signal at 2160 ± 422 (magnetic count). The maximum was reached after 15 minutes at the magnetic count of 4880 ± 554.

The histological specimen confirmed the presence of the tracer in the esophageal wall and in the draining lymph nodes. SPIONs are suitable for the detection of esophageal lymph nodes and should be evaluated in the clinical setting.

![Image](https://academic.oup.com/dote/article-lookup/doi/10.1093/dote/doac051.565/6712129)
Mean age was similar in both groups (60.4±5.9 vs 46.7% were of squamous cell carcinoma in the OE group vs 76.9% of adenocarcinoma in the MIE group. Ivor-Lewis approach was more common in the OE group (53.3% vs 38.5%). MIE was associated with shorter mean operative time (489.3±86.9 vs 526.1±120.1), less blood loss (110±1 vs 250±1), shorter length of stay post-op (10.3±3 vs 24.6±7) and higher number of lymph node yield (44±30 vs 31.7±6). Post-op morbidity was lower in MIE (30.7% vs 73.3%) with Clavien-dindo grade-III and above complication rate of 7.6% vs 26.6%. 90-day mortality was 0 in the MIE vs 1 in the OE group.

MIE was associated with shorter operative time, higher number of lymph node yield, reduced post-op morbidity, mortality and shorter post-operative hospital stay in patients with esophageal cancer. The encouraging results marked the paradigm shift from OE to MIE in our center.

566. PROGNOSTIC SIGNIFICANCE OF TUMOUR BURDEN AND OPERATIVE TECHNIQUE FOR METACHRONOUS PULMONARY METASTASIS FROM ESOPHAGEAL CANCER: A SYSTEMATIC REVIEW AND META-ANALYSIS

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Disease recurrence following treatment for esophageal cancer (EC) remains common despite incremental gains from neoadjuvant chemotherapy. The lung is a common site of distant metastasis following definitive EC treatment. Tumour burden influences the surgical approach utilised in the treatment of pulmonary metastasis from EC. In turn, this impacts patient prognosis. This systematic review sought to identify the impact of tumour burden and surgical approach on 5-year survival following metastectomy of metachronous pulmonary metastasis from EC.

A search of the major reference databases (PubMed, Medline, Cochrane) was performed with no time limits up to March 2022. Results were screened in line with the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA) guidelines. Studies reporting on the number of metastatic pulmonary tumours and operative techniques utilised were included. A random effects meta-analysis model was used to compare the impact of number of metastatic pulmonary deposits (single vs multiple), and operative approach (wedge vs anatomical resection) on the 5-year survival of patients following metastectomy for metachronous pulmonary metastasis from EC.

Seven non-randomised studies comprising 142 patients undergoing pulmonary metastectomy for metastatic EC were included. The number of metastatic deposits (single vs multiple) did not affect 5-year survival (Risk Ratio = 1.08; 95% confidence interval 0.58-2.02; p = 0.81). With respect to surgical technique, anatomical resection did not confer a survival benefit compared to wedge resection of pulmonary metastases from EC (Risk Ratio = 1.33; 95% Confidence Interval: 0.81 – 2.19; p = 0.26).

Tumour burden and surgical technique utilised does not impact upon the prognosis of patients undergoing pulmonary metastectomy for metastatic EC. However, current evidence from smaller non-randomised studies remains weak owing to variation in the clinicopathological features of the primary EC and pulmonary metastasis, limiting outcome assessment.

567. MDT OPTIMIZATION FOR DIAGNOSTIC WORKUP OF ESOPHAGEAL CANCER

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Rapid and complete workup of esophageal cancer is vital for a timely and individual treatment strategy. The aim of this study is to uncover potential delays, inefficiencies and non-contributing investigations in the diagnostic process.

This retrospective cohort study included all esophageal cancer patients referred to or diagnosed in the Amsterdam UMC or Karolinska Institutet between July 2020 and July 2021. Radiology, pathological assessment and MDT meeting reports were reviewed. To assess time interval from diagnosis to treatment, information on date of diagnosis, admittance to referral hospital, MDT and start treatment was collected.

This study included 252 esophageal cancer patients, 187 were treated with curative intent. Curative patients had a median age of 68, were predominantly male (74.9%) with adenocarcinoma (71.4%). Patients had a median of 34 days (IQR:27–43) between diagnosis and start treatment and a median time to referral of 6 days (IQR:0.0–11). Main denominators for prolonged time between diagnosis and treatment was need for additional diagnostics (45.5%) and local protocol (Amsterdam UMC 39 days vs Karolinska 27 days). However, for 33 out of 77 patients (42.9%), no other than logistical reasons could be found.

Differences in time between diagnosis and treatment in the centers can be explained by variations in workup protocol, MDT regulations and the need for additional diagnostics.

568. THE PROGNOSTIC EFFECT OF PATHOLOGICAL LYMPH NODE REGRESSION AFTER NEOADJUVANT CHEMOTHERAPY FOR OESOPHAGEAL ADENOCARCINOMA – A MULTICENTRE STUDY

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The prognostic benefit of primary tumour and lymph node (LN) downstaging after neoadjuvant chemotherapy for oesophageal adenocarcinoma (OAC) is well described. However, there is no robust evidence regarding the prognostic effect of pathological LN regression despite emerging evidence of a discrepancy, in some patients, between tumour regression grade in the primary tumour and response in regional LNs. The aim of this study was to investigate the relationship between pathological LN regression, tumour recurrence and survival.

Retrospective, multicentre cohort study including 763 patients with OAC treated with neoadjuvant chemotherapy followed by surgery at 5 high-volume tertiary referral centres in the United Kingdom. Tumour regression was assessed in the primary tumour (Mandard) and LNs retrieved from oesophagectomy specimens. Patients were classified as LN negative (no evidence of tumour or regression in any LN), complete LN-responders (evidence of regression ≥ 1 LN, no residual tumour in any LN), partial LN-responders (evidence of regression ≥ 1 LN with residual tumour ≥ 1 LN) and LN non-responders (no or minimal regression in any LN). Survival analysis was performed using Kaplan-Meier and Cox regression.

Overall, 243 (31.8%) patients were classified as LN negative, 62 (8.1%) as complete LN-responders, 155 (20.3%) as partial LN-responders and 303 (39.7%) as LN non-responders. Some patients had a LN response in the absence of a response in the primary tumour (97/431, 22.5%). Multivariable Cox regression survival analysis (adjusting for age, gender, chemotherapy regimen, clinical stage, tumour grade, lympho-vascular invasion and primary tumour response) demonstrated improved overall survival in complete LN-responders (Hazard ratio (HR) 0.37 95% confidence interval (CI) 0.24-0.58), partial LN-responders (HR 0.79 95% CI 0.55-0.99) and LN negative patients (HR 0.34 95% CI 0.26-0.44) compared to LN non-responders.

In this cohort of patients with OAC treated with neoadjuvant chemotherapy prior to surgical resection, LN regression was a strong prognostic factor independent of primary tumour response, which was discordant in a significant number of patients. Complete LN-responders had equivalent survival to those with negative LN. Complete and partial LN-responders had better survival than LN non-responders. Evaluation and documentation of LN regression should be considered during the standard pathological reporting of oesophagectomy specimens.

569. INCIDENCE AND ONCOLOGICAL IMPLICATIONS OF THYROID INCIDENTALOMAS IN ESOPHAGEAL CANCER PATIENTS

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