CLINICAL MANAGEMENT OF POST-ESOPHAGECTOMY ANASTOMOTIC LEAK: INSIGHTS FROM TWO CASE STUDIES

Silvia Jarosciakova, Tomas Harustiak

Motol University Hospital, 3rd Department of Surgery, Charles University, Prague

Motol University Hospital
3rd Department of Surgery
Charles University
Prague

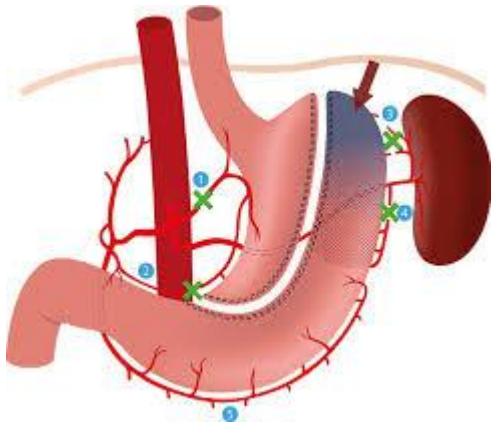
FN MOTOL

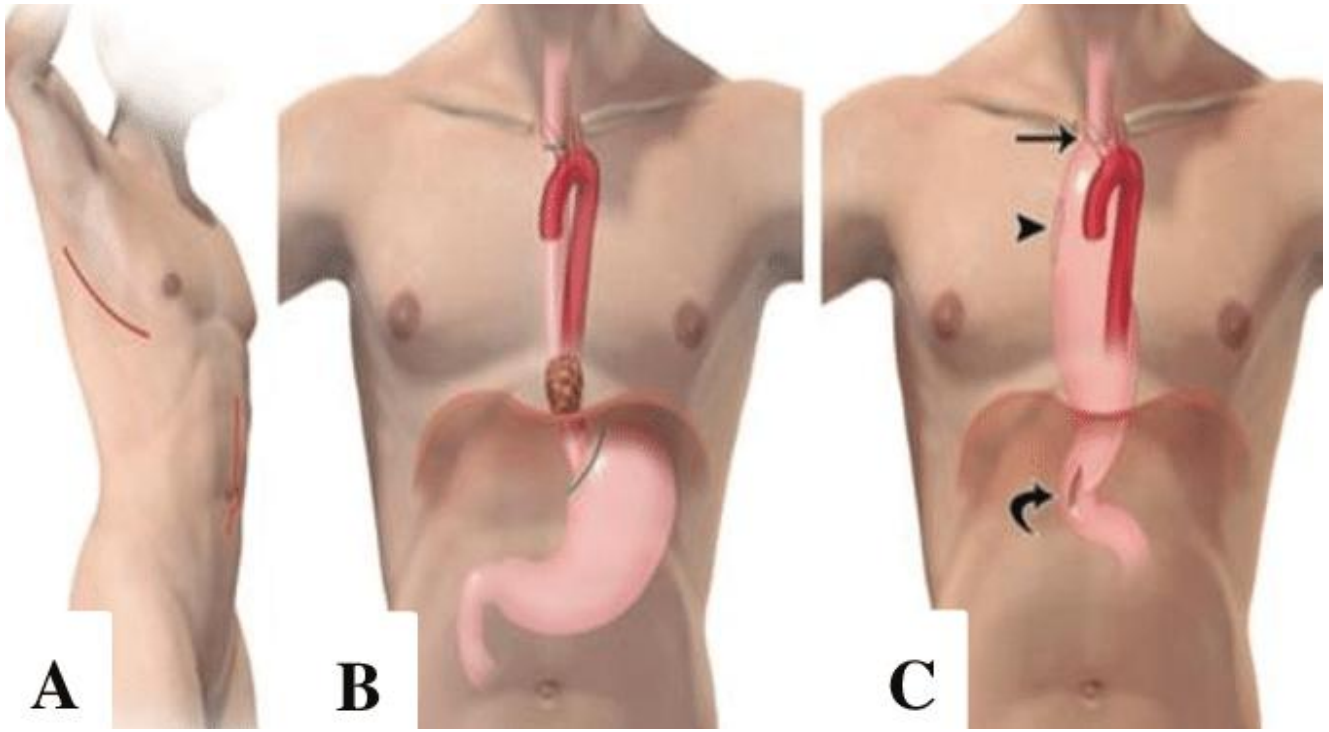
- No conflict of interest

- Background
- Case presentation
- Discussion

Background - Esophagectomy

- Morbidity (up to 56%)
- Mortality (up to 5%)





Schmidt et al, Ann Surg,2017, Guinan et al, MBC Cancer, 2019

Motol University Hospital
3rd Department of Surgery
Charles University
Prague

FN MOTOL

Background - Anastomotic leak

One of the most severe complications of esophagectomy

- Incidence rate: 5-20%[1,2]
- 30-day mortality rate: 2.1- 35.7%[3,4]

[1]Kassis , Annals of Thoracic Surgery, 2013, [2]Seesing, Annals of Thoracic Surgery, 2017,

[3]Junemann-Ramirez, European Journal of Cardiothoracic Surgery, 2025, [4]van Workum, Annals of Thoracic.Surgery, 2017

Motol University Hospital
3rd Department of Surgery
Charles University
Prague

FN MOTOL

Background - Anastomotic leak

International Consensus on Standardization of Data Collection for Complications Associated With Esophagectomy

Esophagectomy Complications Consensus Group (ECCG)

Donald E. Low, FACS, FRCS(C), Derek Alderson, FRCS,† Ivan Cecconello, MD, PhD,‡ Andrew C. Chang, FACS,§*

TABLE 5. Definitions

Anastomotic Leak

Defined as: Full thickness GI defect involving esophagus, anastomosis, staple line, or conduit irrespective of presentation or method of identification

Type I: Local defect requiring no change in therapy or treated medically or with dietary modification

Type II: Localized defect requiring interventional but not surgical therapy, for example, interventional radiology drain, stent or bedside opening, and packing of incision

Type III: Localized defect requiring surgical therapy

Low, Annals of Surgery, 2015

Background - Anastomotic leak

Early diagnosis is crutial

- Upper endoscopy
- Contrast esophagogram
- Computed tomography (CT)

Background - Anastomotic leak

Diagnosis, assessment, and management of surgical complications following esophagectomy

Epub 2018 Jul 8.

Peter P Grimminger [1], Lucas Goense [2], Ines Gockel [3], Damien Bergeat [4], Nicolas Bertheuil [5],

Conservative measures	Endoscopic interventional treatment	Surgical revision
• Nasogastric tube/jejunostomy • Parenteral feeding • IV antibiotics (antimycotics) • Opening of the cervical wound, rinsing, possibly interventional mediastinal drainage • Early dilatation of the anastomosis/pylorus • IV anticholinergics (to reduce saliva)	• Endoscopic vacuum therapy (EVT) (intraluminal/intracavitary)/ endosponge therapy (EST) • Self-expandable metallic stents (SEMS) • Stent-over-sponge (SOS) therapy • "Bear claw"/over-the-scope-clip (OTSC) system • OverStitch • Fibrin glue, combined with vicryl plug	• Sternocleidomastoid (SCM) flap repair for complex cervical leak • Left pectoralis major muscle flap to cover complex leaks (e.g., with esophagotracheal fistula) • Resection of gastric fundic tip necrosis and refashioning of the anastomosis (local ischemia) • Diversion surgery dismantling the gastric conduit and esophagostomy (diffuse ischemia and gastric conduit necrosis)

Grimminger, Annals of The New York Academy of Sciences, 2018

Motol University Hospital
3rd Department of Surgery
Charles University
Prague

FN MOTOL

CASE PRESENTATION

Motol University Hospital
3rd Department of Surgery
Charles University
Prague

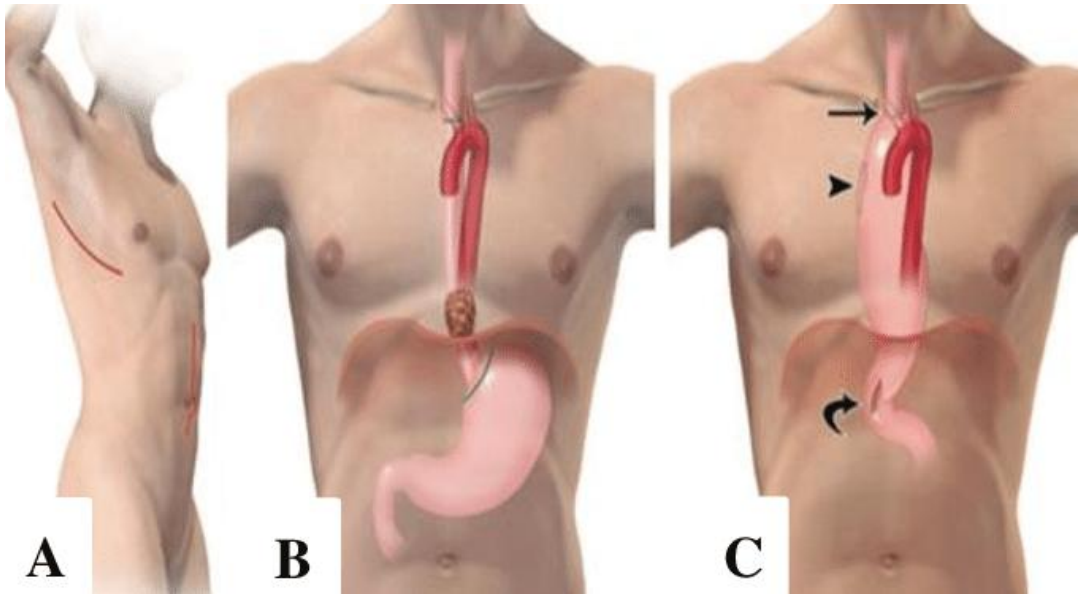
Patient 1

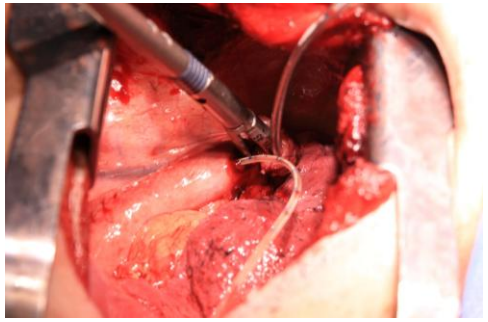
- 69 y.o. M, ECOG 1
- Poorly-differentiated SCCE
- Tumor of middle esophagus
- Staging cT3 N1 M0
- Neoadjuvant proton chemoradiation

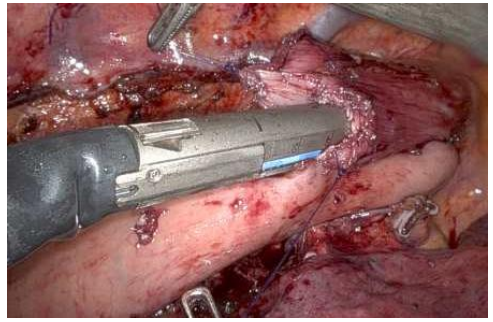
Patient 2

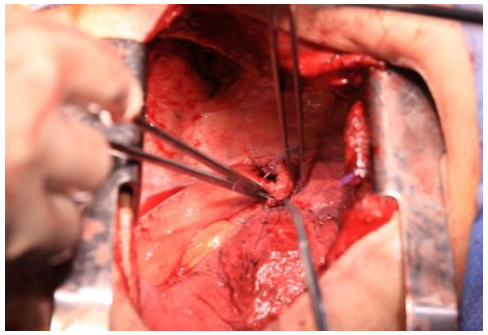
- 71 y.o. M, ECOG 0
- Well-differentiated adenocarcinoma
- Tumor of lower esophagus
- Staging cT2 N1 M0
- NACT, FLOT regimen

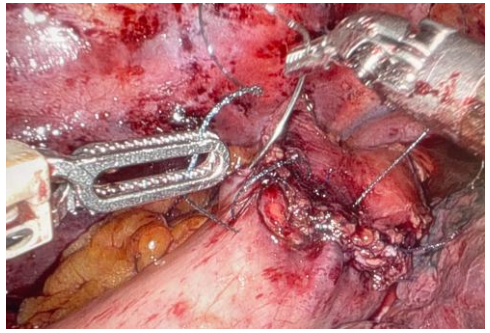
- Ivor-Lewis hybrid laparoscopic-assisted MIE and RAMIE
- Linear-stapled intrathoracic anastomosis







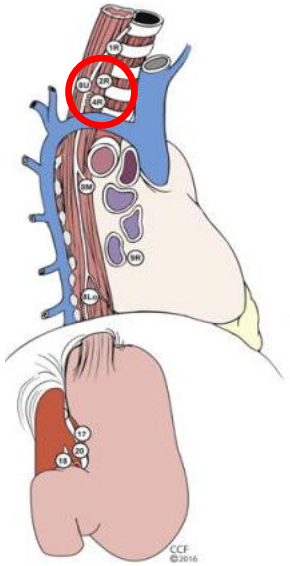


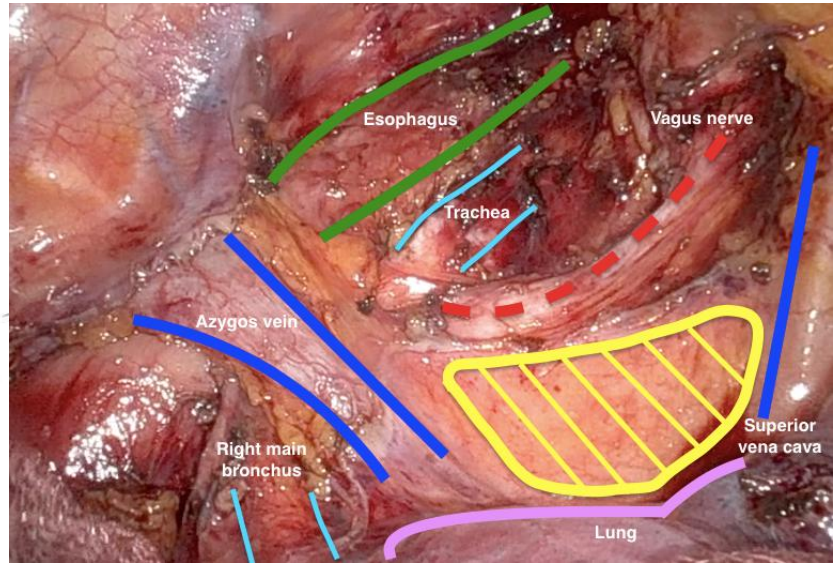


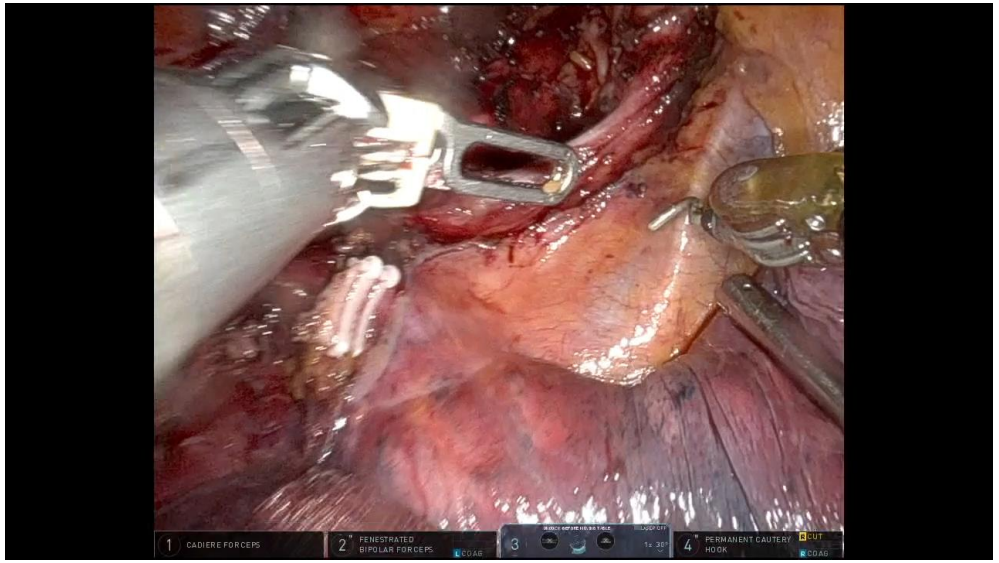
Motol University Hospital
3rd Department of Surgery
Charles University
Prague

FN MOTOL

- Extended two-field lymphadenectomy







Patient 1

69 y.o. M, SCCE of middle esophagus

- Normal contrast esophagogram
- LOS 10 days
- Pathology: ypT1 N0 (0/31) M0, TRG 2

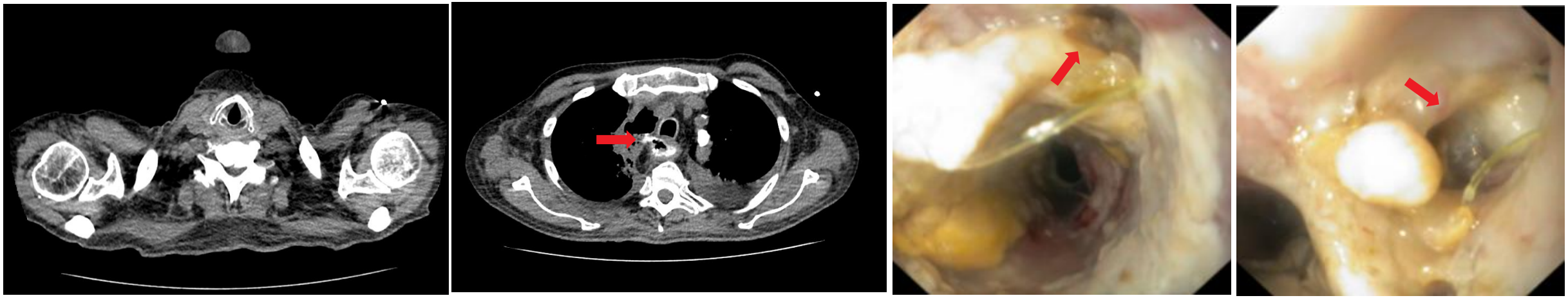
Patient 2

71 y.o. M, EAC of lower esophagus

- Normal contrast esophagogram
- LOS 8 days
- Pathology: ypT2 N2(4/44) N0, TRG 4

Patient 1 – Rehospitalization

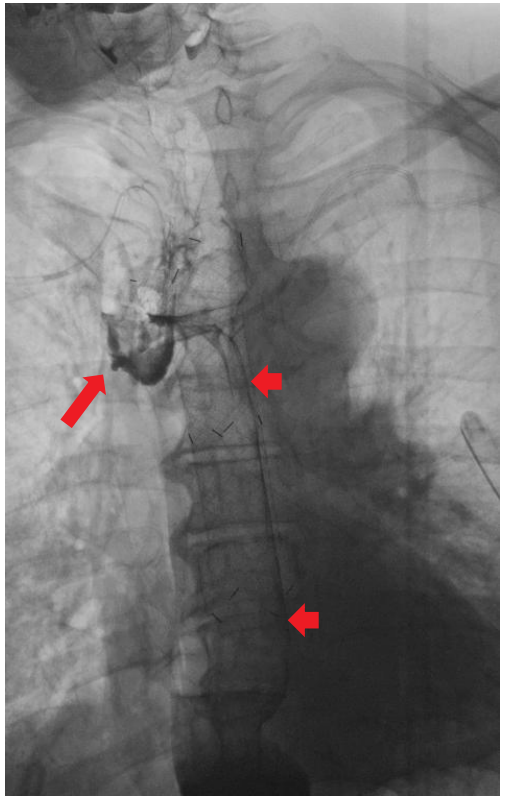
- 32nd postoperative day - early-stage sepsis, diagnosis of AL



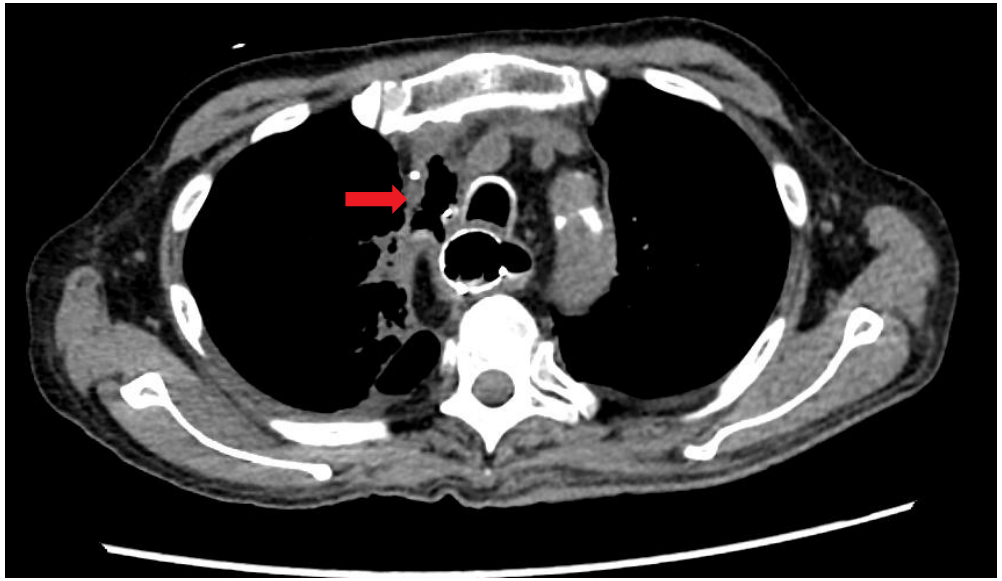
- Drainage of a mediastinal abscess via a cervical approach using Jackson-Pratt drain, bilateral drainage of pleural effusion and placement of an esophageal stent

2nd day

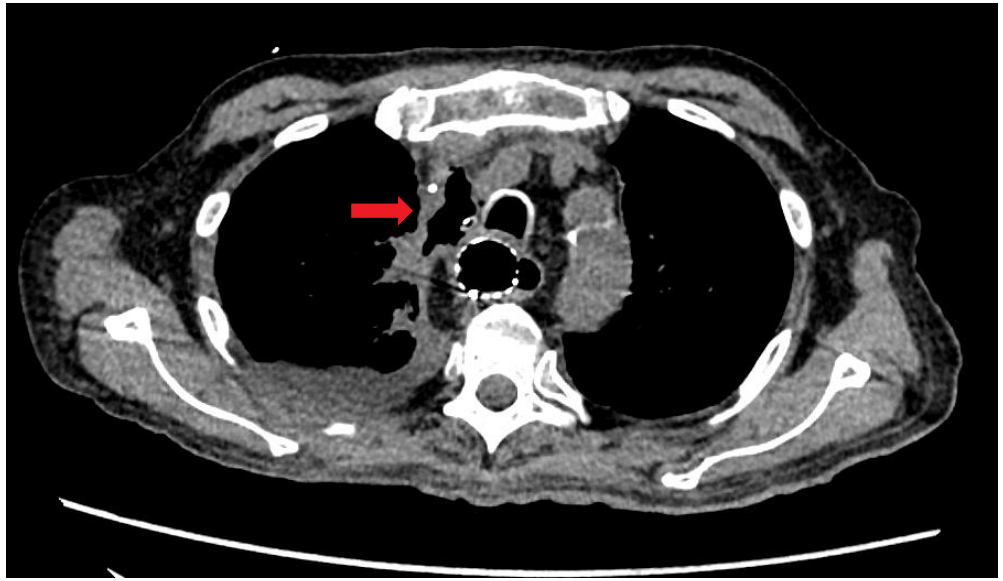
- Leak on contrast esophagogram
- Repositioning of migrated stent
- Stable condition over the following 3W



10th day



17th day



Motol University Hospital
3rd Department of Surgery
Charles University
Prague

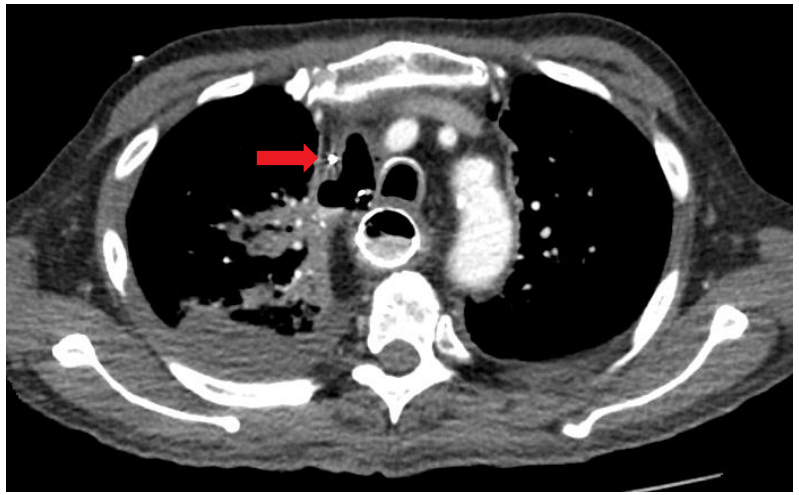
FN MOTOL

22nd day

- Aspiration pneumonia

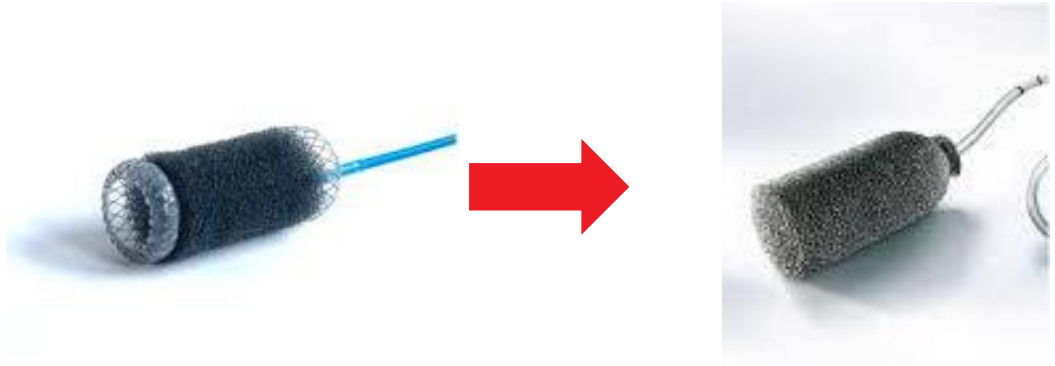
26th day

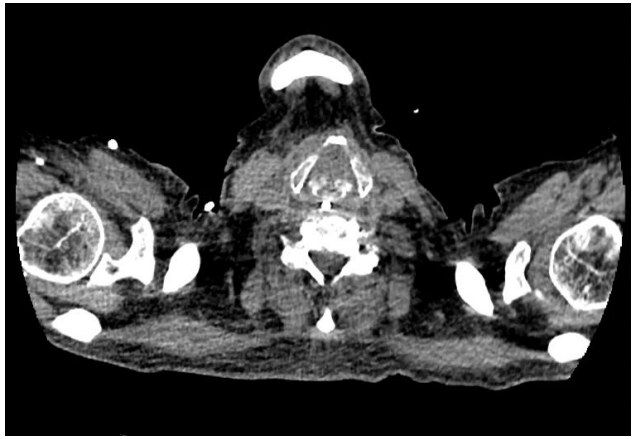
- Stent replacement with a VACstent

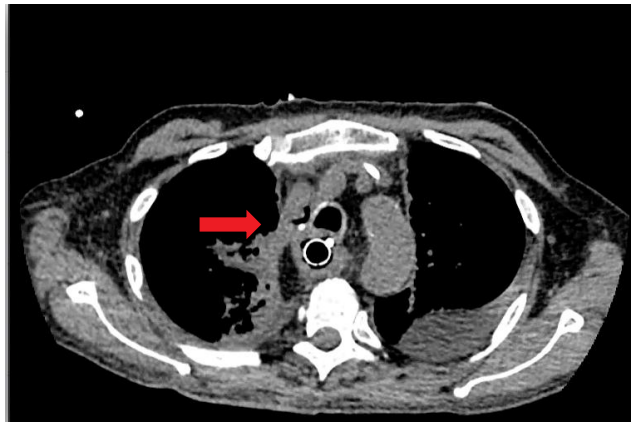


33nd day

- VACstent replacement with an endoscopic vacuum therapy (EVT, Eso-Sponge®)

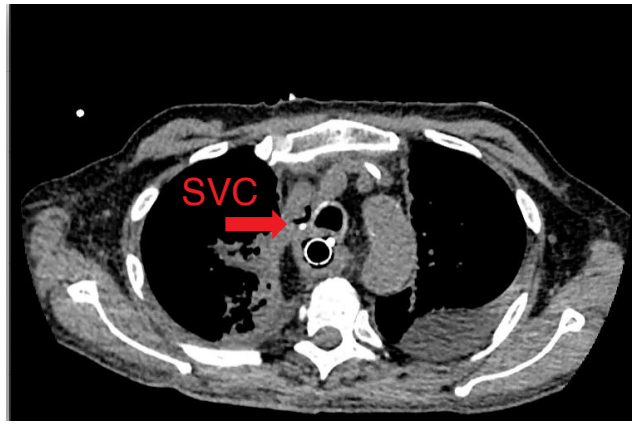






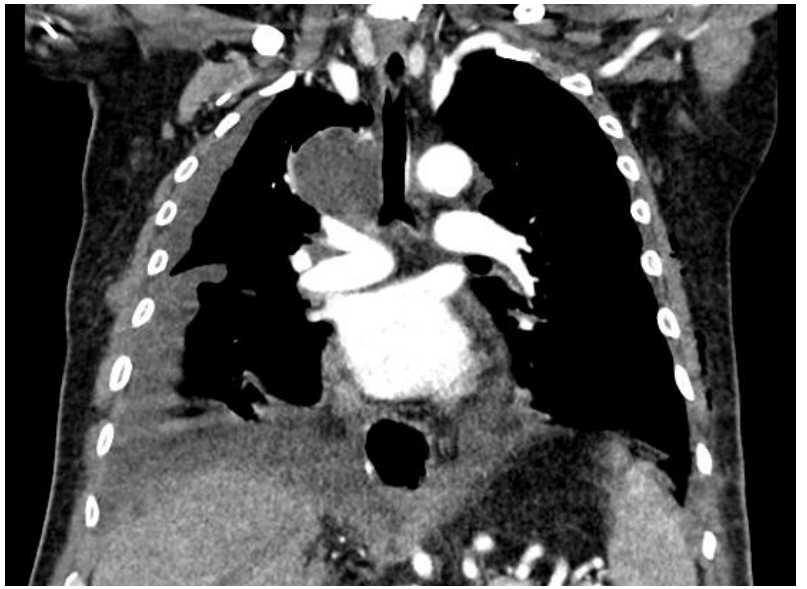
36nd day

- Removal of the intraluminal EVT
- Massive hemorrhage
- Emergency clamshell thoracotomy
- Death due to exsanguination
- **Cause of death: 15 mm defect of the superior vena cava**

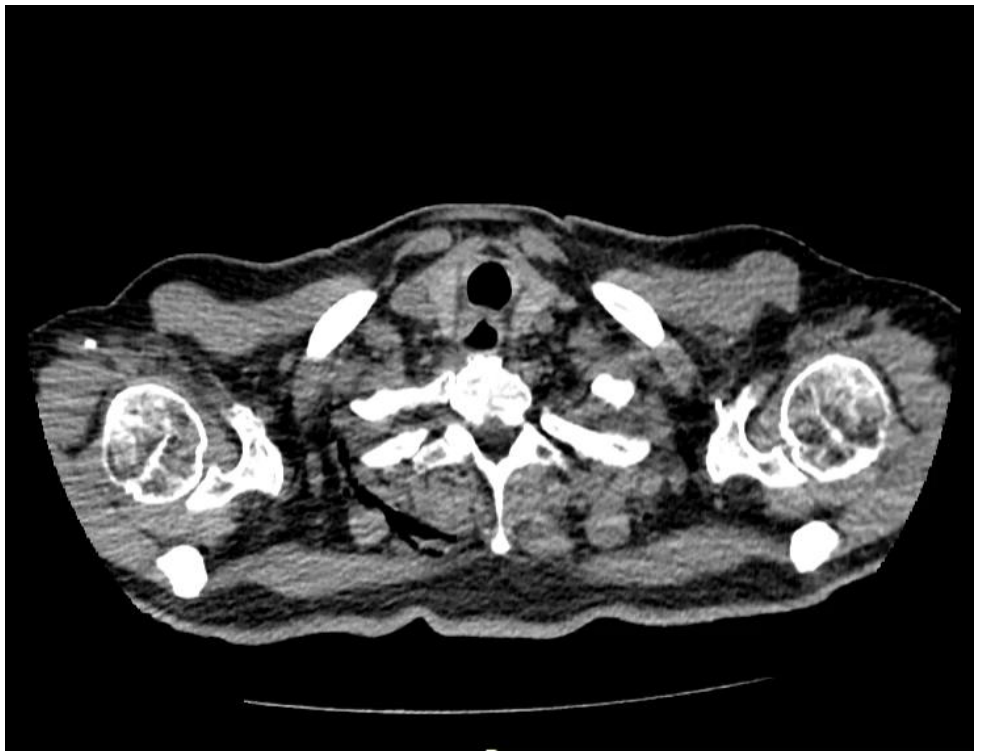


Patient 2 – Rehospitalization

- 4th day after discharge
- Dyspnea, retrosternal chest pain
- Endoscopy: candidosis without necrosis
- CT-navigated bilateral drainage of pleural effusion
- Antibiotics, antimycotics

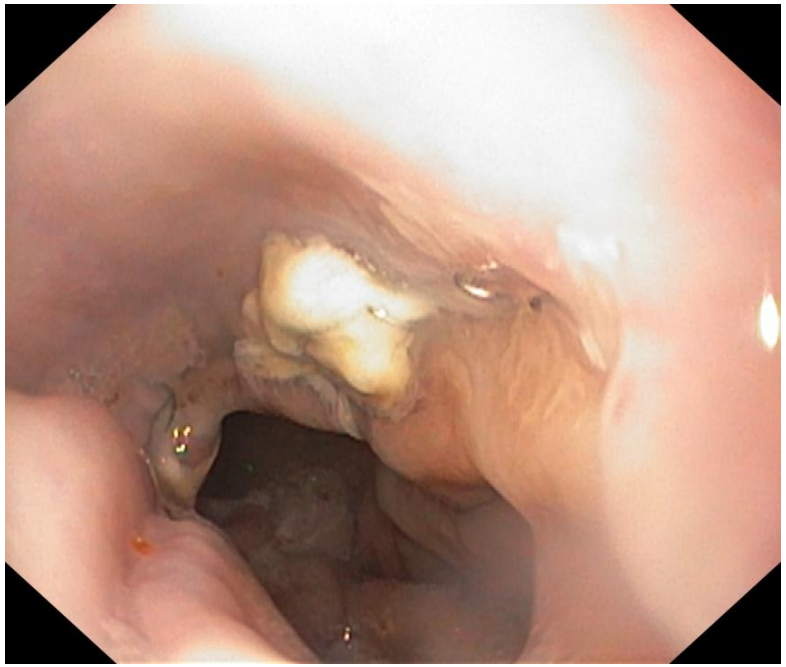
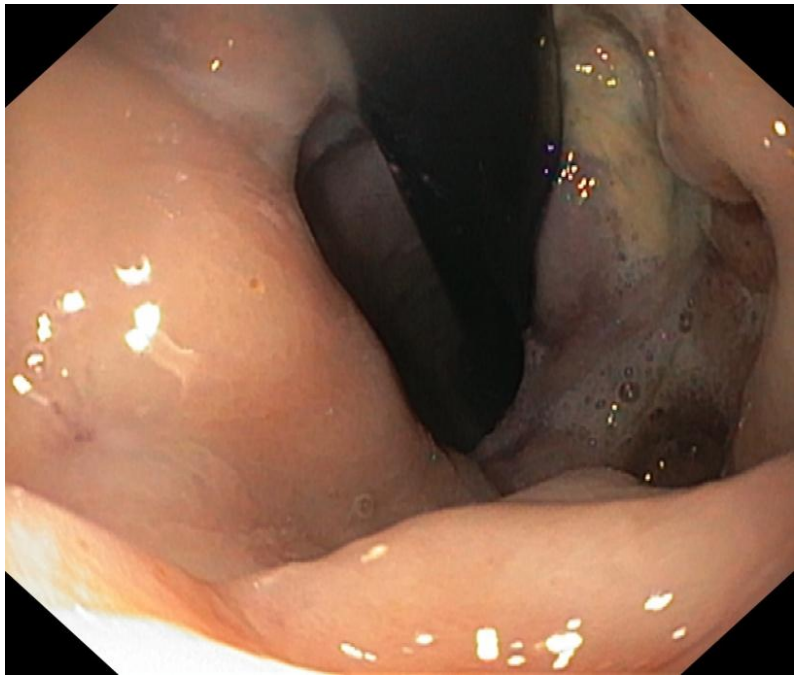
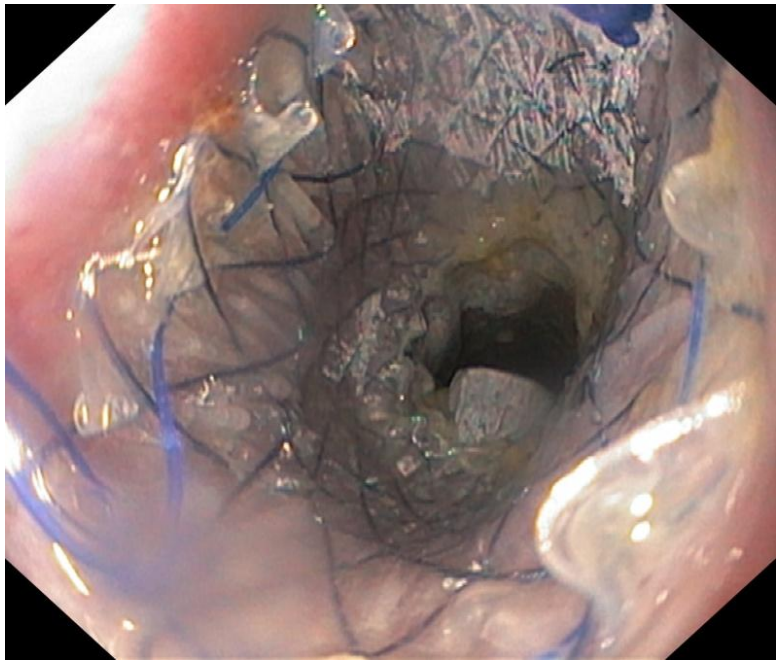


6th day



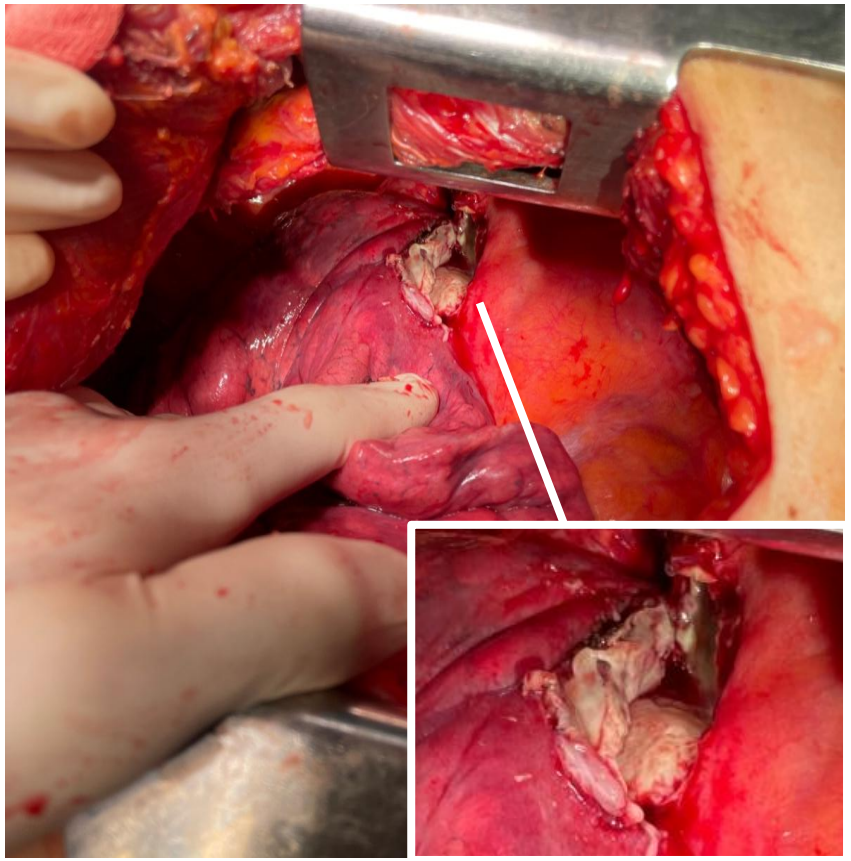
- 5 mm defect of conduit stapled line, which conumicated with cavity after paratracheal lymphadenectomy

6th day

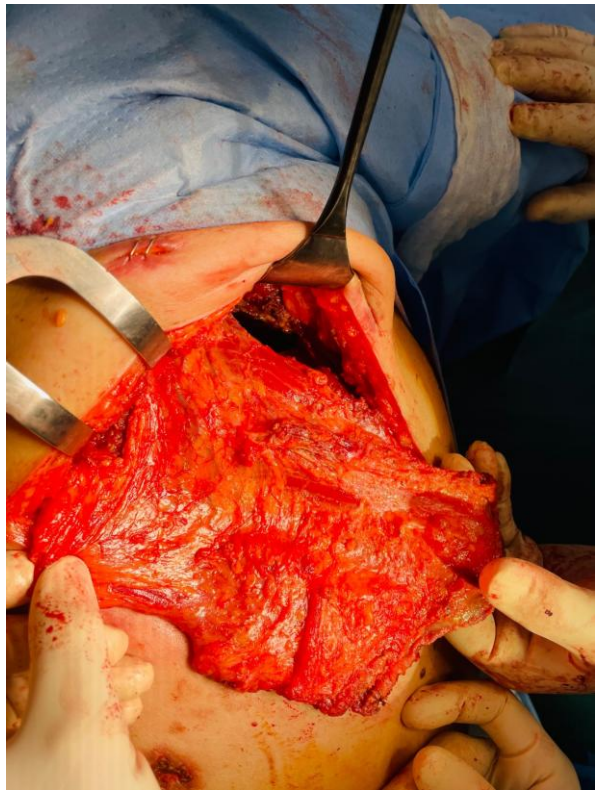




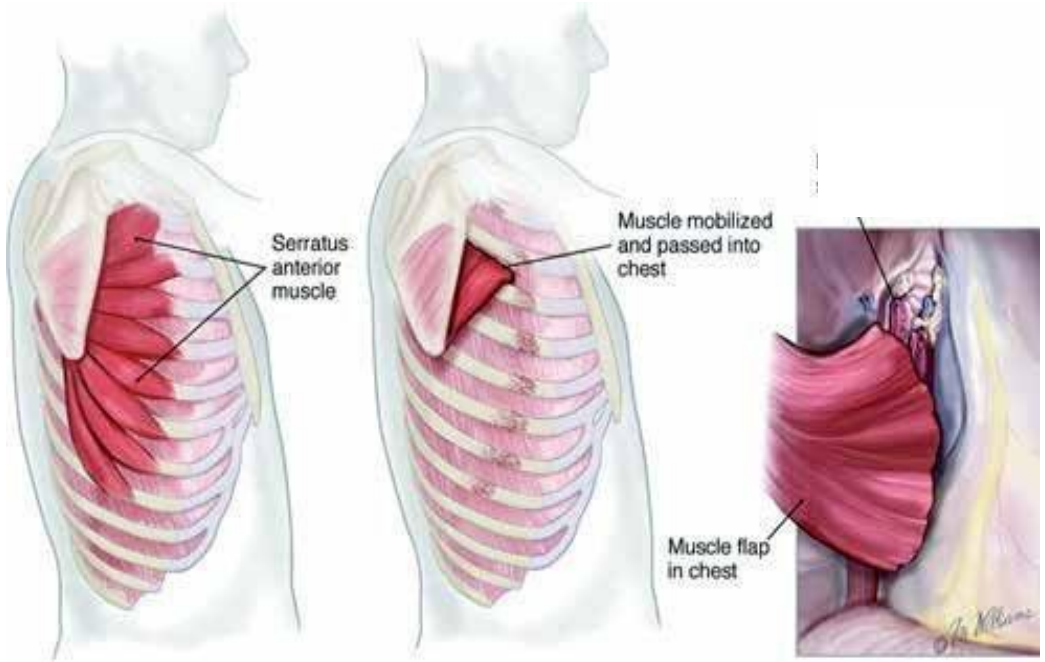
- Drainage of a mediastinal abscess via a cervical approach using Jackson-Pratt drain and placement of an esophageal stent

9th day



9th day





Karmakar, Pleura - A Surgical Perspective, IntechOpen, 2022

Motol University Hospital
3rd Department of Surgery
Charles University
Prague

FN MOTOL

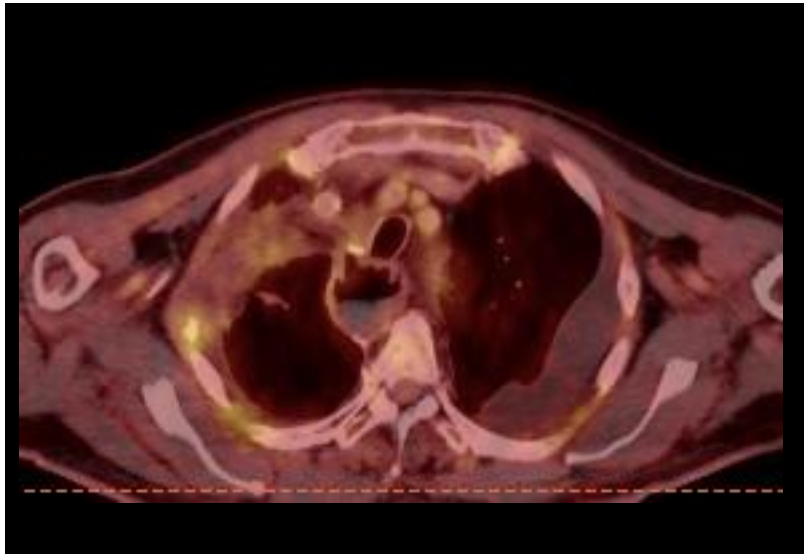
28th day

- discharge

9th day

12th day

4 month later



Motol University Hospital
3rd Department of Surgery
Charles University
Prague

FN MOTOL

Summary

- Despite advancements in surgical techniques and perioperative care, AL continues to challenge surgeons and negatively impact patient outcomes.
- Early diagnosis of AL is mandatory.
- Multidisciplinary collaboration involving surgical, endoscopic treatment, intensive care, and nutritional support is essential.

Summary

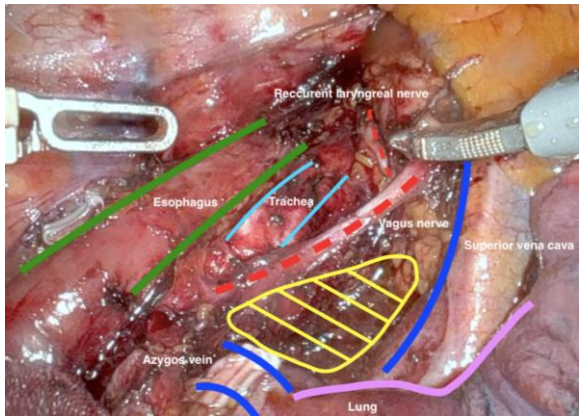
- Current trends increasingly favor endoscopic vacuum therapy (EVT) or the use of VACstents; however, these modalities are associated with certain risks.

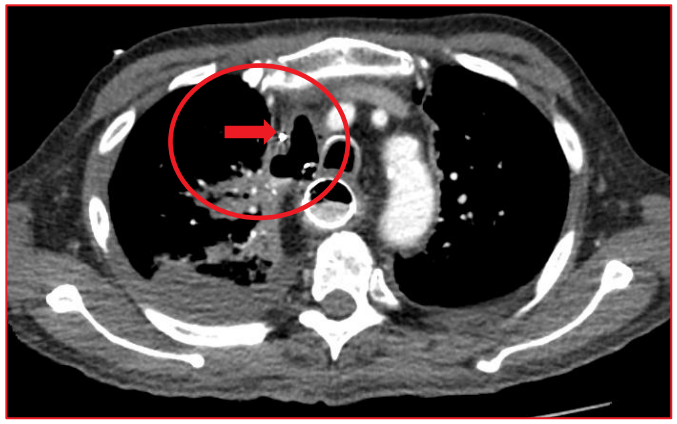
- A challenge arises when the wall of a paraesophageal abscess in the setting of AL is formed by a vulnerable structure such as the superior vena cava (SVC)

- The combination of a persistent abscess and negative pressure may result in wall perforation and exsanguination.

Summary

- This situation may occur following a right upper paratracheal lymphadenectomy.





- For abscess in this region, we recommend a more aggressive approach involving surgical revision and cavity obliteration with a muscle flap.

- Preventive measures to avoid cavity formation include the use of an omental or muscle flap to obliterate the paratracheal space.

Motol University Hospital
3rd Department of Surgery
Charles University
Prague

Thank you for you attention

silvia.jarosciakova@fnmotol.cz

tomas.harustiak@fnmotol.cz

Motol University Hospital
3rd Department of Surgery
Charles University
Prague

FN MOTOL