Case Report

A case of Iatrogenic Mediastinitis

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Abstract

Mediastinitis is a severe and potentially life-threatening inflammation or infection that involves the mediastinum. Iatrogenic lesions are the most common cause of mediastinitis secondary to esophageal perforation. Early diagnosis and surgical treatment are the most important factors in the treatment of patients with this condition. Here we report a 45-year-old male with this condition who has been treated successfully and discharged accordingly.

1. Background

Mediastinitis refers to inflammation of the mediastinal structures that lie between the right and left pleura between the thoracic inlet and the diaphragm. Mediastinitis can be divided into the acute and chronic forms according to the etiology and the clinical course. Acute suppurative mediastinitis is an uncommon and life threatening condition. The main causes of acute mediastinitis include esophageal perforation, post-operative complications and the spread of an adjacent infection. Intraoperative and postoperative measures that can reduce the incidence of mediastinitis include maintaining a complete aseptic technique and ensuring meticulous hemostasis and proper closure of the sternum.

2. Case Presentation

A 45-years aged male referred to Kauvery hospital with complaints of breathing difficulty and retrosternal pain. Initially patient presented to an outside hospital with c/o retrosternal chest pain and regurgitation for the past 15 years and the symptoms had worsened in the past 5 years. The patient was evaluated and found to have Hiatus hernia for which he underwent Laparoscopic Fundoplication. During the procedure the patient was found to have a lesion at the lower end of esophagus for which partial excisional biopsy was done. The following POD -1 patient was extubated, developed breathing difficulty and referred here for further management with a right side ICD in-situ.

2.1 Social History

He does not have any history of cigarette smoking, alcohol or drug addiction.

2.2 Allergies

No known medicine or environmental allergies.

2.3 Past medical history

Systemic hypertension

2.4 Physical examination

Vitals signs: Temp – 99°F, HR-68/min, BP- 110/70 mmhg, SpO2 – 92% on 40% Fio2, RR-36/min

Airway – protected with 8 size ETT

Breathing- B/L adequate chest, diminished breath sounds.

Circulation – all peripheral pulse +

Disability – GCS –E4VTM6

In view of breathing difficulty and recent surgery, CECT chest was taken which showed contrast leakage into lower end of esophagus with widening of mediastinum indicating esophageal perforation and mediastinitis. The patient was taken up for emergency thoracoscopic drainage + Diversion Cervical Esophagostomy + Feeding Jejunostomy by the surgical gasteroenterology team. Patient was shifted to ICU post operatively. In the ICU patient was extubated on POD-6 with NIV. Gradually the patient was weaned from NIV with BIPAP and then shifted to ward.

3. Investigations

POCUS

Good LV systolic function

Grade I LV diastolic dysfunction

Markable Investigations

Sodium - 134 mmol/ dl

Potassium - 3.6 mmol/L

TSH - 1.37 mU/L

Urea - 34.24 mg/dL

Creatinine - 0.55mg/dL

Hb - 11.1 g/dL

PCV – 35 %

Platelet Count - 85600cells/µl

Total Bilirubin -0.40 mg/dL

Direct Bilirubin - 0.13 mg/dL

Indirect Bilirubin - 0.21 mg/dL

SGOT - 21.7

SGPT - 80.1

Albumin- 2.44

3.1 Imaging Examination

K/c/o Esophageal surgery post-operative status shows multi-loculated hydro pneumothorax right side with ICD tube in-situ and collapse of right lung with mediastinal shift to left side. Post-operative changes in distal esophagus with fluid collection around it in posterior mediastinal aspect with direct leakage of oral contrast from distal esophagus to right pleural cavity into the hydro pneumothorax. Minimal left pleural effusion with left basal atelectasis.

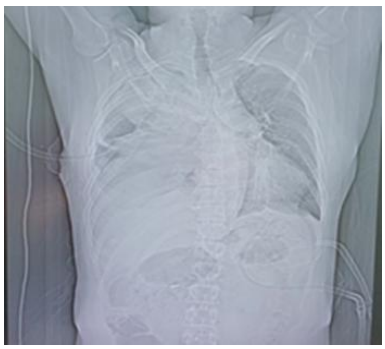

Fig (1): CT Thorax scan

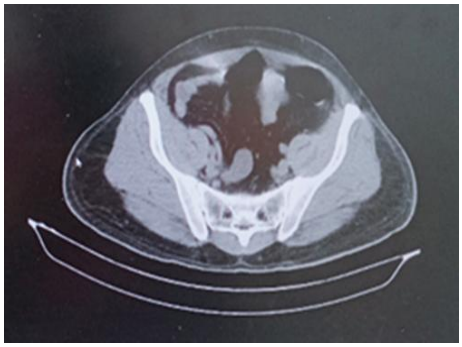

Fig (2)

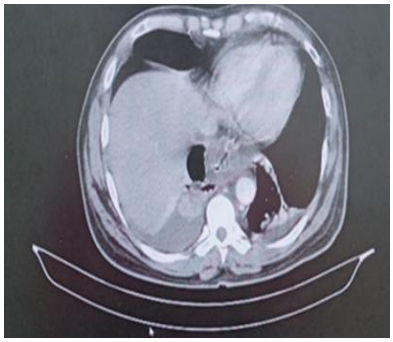

Fig (3)

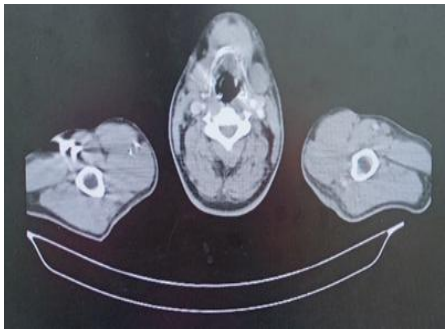

Fig (2), (3), (4): Thoracic Routine

The CECT scan revealed an active contrast leak into the right thoracic cavity, indicating a serious condition requiring immediate attention.

The patient was started on oxygen support, intravenous fluids, antibiotics, analgesics, and proton pump inhibitors (PPIs) to stabilize condition. After obtaining informed high-risk consent and anesthetic fitness, the patient underwent emergency surgery. The surgical procedure included Thoracoscopic Drainage, Diversion Cervical Esophagostomy, and Feeding Jejunostomy.

Postoperatively, the patient was admitted to the Intensive Care Unit (ICU) and placed on mechanical ventilator support. Total Parenteral Nutrition (TPN) was initiated to provide nutritional support. A cardiologist's opinion was obtained, and their advice was followed. Feeding through jejunostomy (FJ) was gradually started.

The patient showed signs of improvement and was extubated on POD - 4. Non-Invasive Ventilation (NIV) support was initiated. Antibiotics were escalated according to culture reports, and TPN was stopped. The patient was gradually weaned off NIV support and shifted to ward.

Repeat cultures were taken from the intercostal drain (ICD), and antibiotics were changed accordingly. FJ feeds increased gradually, and the patient's bowel movements resumed. The abdominal drain and 1 ICD was removed. Although one ICD remained in-situ, the patient's condition improved significantly, and he was discharged in a stable condition.

4 Management

IV Fluids

Drug	Dose	Route of Administration
Inj. Meropenem	1gm	IV
Inj. Metrogyl	500mg	IV
Inj. Amikacin	750mg	IV
Inj. Clexane	40mg	SC
Inj. Labetalol	5mg	IV
Inj. Syscan	200mg	IV
Inj. Pantocid	40mg	IV
Inj. Emeset	4mg	IV
Inj. Tramadol	50mg	IV
Inj. Paracetamol	1gm	IV
Inj. Tigecycline	100mg	IV
Inj. Potassium chloride	60meq	IV Infusion

4.1 Non-Pharmacological

- Nebulization
- Chest physiotherapy
- Incentive spirometry
- Physiotherapy

4.2 Follow up treatment

- Tab. Pantocid 40mg
- Tab. Paracetamol 1gm
- Tab. Ecosprin 75 mg
- Tab. One Up Gold 1 Tab
- Syp. Cremaffin 10ml

4.3 Skilled Nursing Care in Iatrogenic Mediastinitis

- Monitoring Vital Signs and Lab Values to detect signs of sepsis or organ dysfunction.
- Managing mediastinal drains, including monitoring output and ensuring proper placement.
- Administering antibiotics and other medications as prescribed.
- Providing wound care, including dressing changes and assessing for signs of infection.
- Supporting respiratory function through mechanical ventilation or oxygen therapy.
- Delivering nutritional support through enteral or parenteral nutrition.
- Preventing complications, such as pressure ulcers or venous thromboembolism.
- Collaborating with the healthcare team to develop and implement a comprehensive care plan.
- Educating patients and families about the condition, treatment, and self-care.
- Continuously assessing and responding to changes in the patient's condition.

5. Conclusion

Iatrogenic Mediastinitis is a serious and potentially life-threatening complication that requires prompt recognition, aggressive treatment, and skilled nursing care. With a multidisciplinary approach, including surgical intervention, antimicrobial therapy, and supportive care, patients can recover and achieve optimal outcomes. Early detection, effective management, and prevention of complications are crucial in reducing morbidity and mortality associated with this condition.