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Case Report

A curious case of COVID-19 and "empyema"

Elizabeth Kurian*, Jijo Joseph, Anjali N. Mukundan, Rajeev Anand

Department of Radiology, MOSC Medical College, Kolenchery, Kerala, India

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***Correspondence:**
Dr. Elizabeth Kurian,
E-mail: el212el@gmail.com

ABSTRACT

The coronavirus disease -19 (COVID-19) pandemic has challenged the existing healthcare systems in many ways. The varied presentations and numerous complications described is one of the most pressing concerns of the ongoing pandemic. Here we present an unusual case which was initially misdiagnosed due to presence of coexisting corona virus infection

Keywords: COVID -19, Empyema, Oesophageal ruptures

INTRODUCTION

The coronavirus disease-19 (COVID-19) pandemic has challenged the existing healthcare systems in many ways. The varied presentations and numerous complications described is one of the most pressing concerns of the ongoing pandemic.[1-4] Here we present a case of "empyema" which was misdiagnosed initially which later turned out to be spontaneous rupture of esophagus with esophageo-pleural fistula. Coexistent COVID-19 pneumonia further mislead the initial management protocol. This case represents the importance of ruling out coexistent atypical complications that can occur with COVID-19 pneumonia.

CASE REPORT

A 51-year-old male was referred from a peripheral hospital with complaints of chest discomfort and breathing difficulty. He also gave history of fever and productive cough 2 days back. He was tested positive for COVID-19 1 month back. He went to a local hospital and chest X-ray taken showed left sided gross pleural effusion. Emergency ICD insertion was done which drained dark red haemorrhagic fluid. The patient was admitted in the intensive care unit and was managed with intravenous antibiotics, bronchodilators and other supportive measures. His blood reports gave a sepsis picture and blood culture showed klebsiella pneumonaie and antibiotics were adjusted accordingly. Despite high antibiotic coverage the patient was not improving clinically and a contrast enhanced computed tomography (CECT) thorax was done for further evaluation.

On plain CT axial sections left moderate hydropneumothorax was noted and also a small pocket of free air was noted in the mediastenum (Figure 1).

For evaluation of this free air in the mediastinum, the patient was administered oral positive contrast and intravenous contrast. On contrast enhanced sections a defect was noted in the lower one third of the left side of esophagus at the level of D10 vertebrae with approximate size of the defect measuring 1.7×1.5 cm (CC X AP). The defect was located ~3 cm proximal to the gastro-esophageal junction (Figure 2). Oral positive contrast was seen tracking into the left side of mediastinum through the defect and showed direct communication with the left pleural cavity (Figure 3). Esophagus proximal to the perforation showed mild diffuse wall thickening. From CT sections the diagnosis of an esophageal perforation with

fistulous communication between esophagus and pleural cavity was made.

The patient was advised further management. However due to financial constraints, the patient's attenders were not willing to continue treatment and left against medical advice.

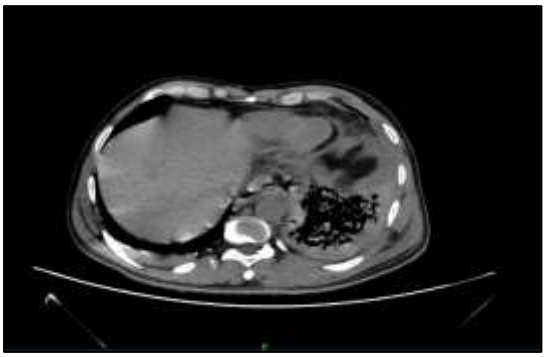

Figure 1: Plain CT axial sections show a left sided pleural effusion with air pockets noted within.

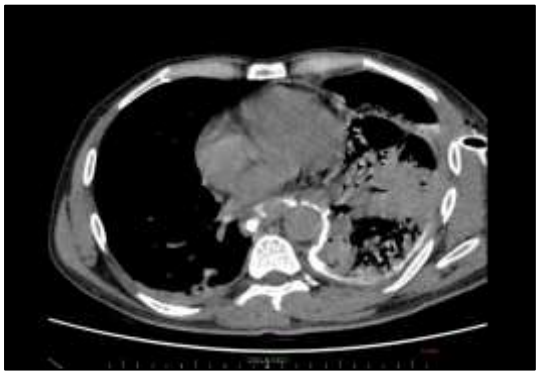

Figure 2: Contrast enhanced axial CT sections following oral positive administration demonstrate defect in lower third of esophagus.

Figure 3: Coronal contrast enhanced sections of the same.

DISCUSSION

Oesophageal emergencies require prompt diagnosis and treatment; however, they are often diagnosed late. Spontaneous rupture of esophagus or boerhaave's syndrome is an uncommon condition. Classical presentation of boerhaave's syndrome is the Mackler's triad of: vomiting followed, by chest pain and subcutaneous emphysema due to esophageal rupture. However, upto 1/3rd of patients presents with shock or may present in shock. Therefore, a high clinical index of suspicion is required for the prompt diagnosis of the condition.[5-8.]

Esophageo-pleural fistula is an even rarer entity which usually occurs secondary to malignancy or esophageal instrumentation. It can also occur as a complication of pneumonectomy rarely. Spontaneous esophageo-pleural fistula is a very rare clinical condition.[5-10]

CT has been regarded as the imaging modality of choice for the evaluation of a suspected case of esophageo-pleural fistula and also for demonstration of the communication between the pleural space and esophagus. CT also helps to assess the mediastinal involvement as well.[8]

Management of esophageo-pleural fistula includes initial conservative therapy with antibiotics, tube feeding and drainage of empyema. Definitive management usually requires repair or reconstruction of esophagus.[6,8]

In our case, the patient did not give a typical history of vomiting followed by chest pain nor did the patient have subcutaneous emphysema on initial examination. Retrospectively the patient did give history of forceful coughing but that was attributed to COVID-19 infection.

Furthermore, the typical presence of food particles through the ICD was also not present. The worsening of his condition was attributed to pneumonia and development of empyema. In this case the plain CT finding of a small pocket of air in the mediastinum led to further evaluation with oral positive contrast which demonstrated the leak.

CONCLUSION

Esophageo-pleural fistula is rare clinical entity which often has unusual clinical presentation.

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