Development of a Giant Stomach in the Thoracic Cavity After Esophagectomy: A Rare Pulmonary Complication

Dear Editor,

Esophagectomy is the surgical procedure, involving the resection of the esophagus, commonly performed for conditions, such as esophageal cancer and injuries caused by corrosive substances. First described by Lewis in 1946, this procedure consists of a two-stage surgical intervention: Laparotomy to mobilize the stomach and thoracotomy to perform the esophagectomy and esophagogastric anastomosis.[1] Esophagectomy is widely used in the treatment of both malignant and benign diseases; however, complications may arise in the postoperative period. These include pulmonary complications, anastomotic leaks, and delayed gastric emptying.[2]

Ingestion of corrosive substances can lead to significant damage to the esophagus, often necessitating surgical intervention. Following esophagectomy, complications such as impaired gastric emptying can lead to the development of abnormal structures within the thoracic cavity, which may adversely affect lung function.[3] This article aims to present a case of an enlarged stomach in the thoracic cavity following esophagectomy and highlight the importance of detailed anamnesis and early diagnosis.

A 27-year-old male patient presented to our outpatient clinic with complaints of dyspnoea. Physical examination revealed decreased breath sounds on the right side and fingertip oxygen saturation of 94%. Chest X-ray revealed consolidation extending into the upper zone of the right lung, along with a line suggestive of pneumothorax, starting from the apex of the lung and extending toward the basal region [Figure 1]. However, detailed anamnesis revealed that the patient had ingested a pesticide 7 years ago, which led to corrosive esophagitis and a subsequent esophagectomy. A computed tomography (CT) scan of the thorax revealed a mass in the right hemithorax, measuring 276 × 179 mm at its widest point, with layered content consistent with an enlarged stomach. Additionally, the mass exerted pressure on the right lung parenchyma, leading to the development of centrilobular nodules, ground-glass opacities, and compressive atelectasis [Figure 2]. Pressure on the mediastinal structures was noted, with mild displacement of the mediastinal structures to the left.

In the diagnostic process in pulmonary disease clinics, the first step is a thorough anamnesis and physical examination. Chest X-ray is one of the most important tests and plays a critical role in differential

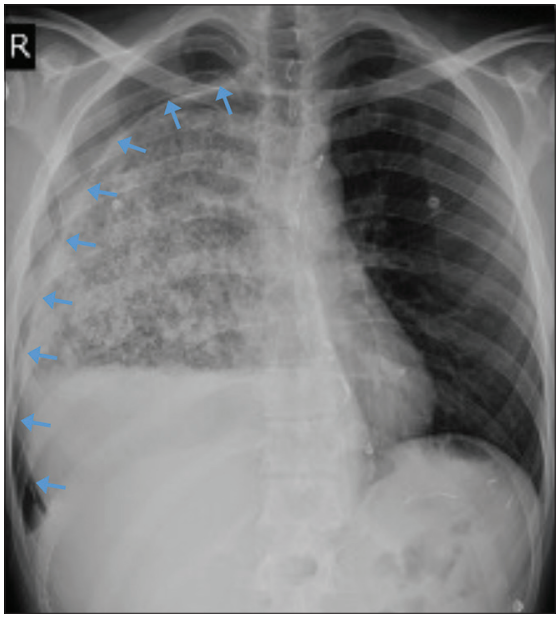


Figure 1: Chest X-ray showing consolidation extending into the upper zone of the right lung. A line suggestive of pneumothorax, extending from the apex of the right lung to the basal region, is indicated by the blue arrow

diagnosis. Chest X-rays provide valuable information for evaluating the patient's condition and confirming the diagnosis. In this case, the findings on the chest X-ray could have easily been misinterpreted as pneumonia. However, a detailed anamnesis and radiological examination led to the correct diagnosis. Complications arising after esophagectomy are significant sources of morbidity and mortality in the postoperative period. Pulmonary complications and anastomotic leaks, in particular, are among the most common and potentially fatal complications.[4] Pneumonia is the most common postoperative complication following transthoracic esophagectomy, accounting for up to 55% of postoperative mortality.[4] The primary causes of these complications include the size of the surgery, the trauma caused by the thoracotomy incision, and pain, which can lead to hypoventilation, atelectasis, and pneumonia.[5] Additionally, the incidence of postoperative complications ranges from 20% to 80%. Systemic complications such as pneumonia, myocardial infarction, and anastomotic leaks are also frequently observed.[6,7] However, anastomotic leakage remains one of the most feared complications, occurring in 0%–40% of patients.[7,8] Over time, the accumulation of gastric contents in the thoracic cavity can exert pressure on adjacent structures, leading to various respiratory system complications. As the stomach

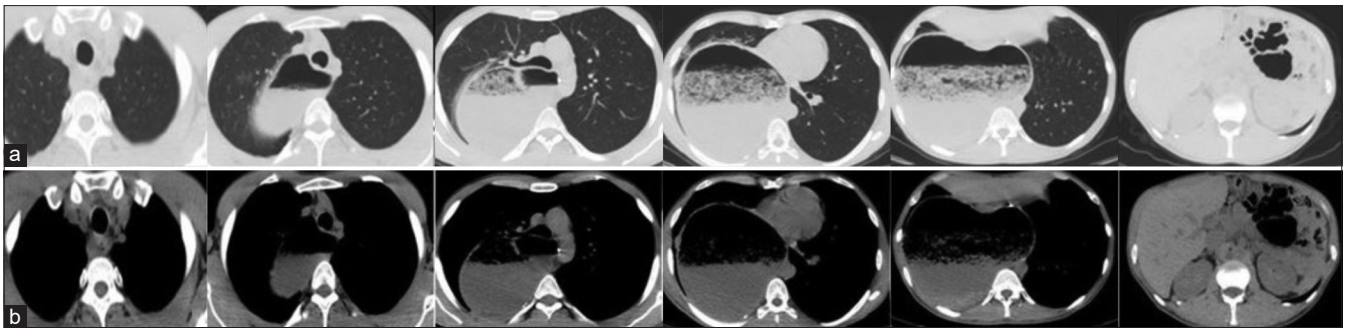


Figure 2: A computed tomography (CT) scan of the thorax revealing an enlarged stomach in the right hemithorax, measuring 276 × 179 mm at its widest point, with layered content consistent with gastric distension. The enlarged stomach exerts pressure on the right lung parenchyma, leading to the development of centrilobular nodules, ground-glass opacities, and compressive atelectasis. The findings are shown in both the parenchymal window (a) and the mediastinal window (b), highlighting the compression on the right lung and mediastinal displacement

enlarges within the thoracic cavity, it can hinder the expansion and proper inflation of the lungs. This can result in hypoventilation and respiratory distress.[4] Additionally, the mass of the stomach in the thorax can lead to compressive atelectasis in the lung parenchyma, causing collapse of the alveoli and reducing oxygen exchange.[5] The pressure exerted on the lungs limits respiratory capacity, forcing the patient to struggle for additional air intake. Such conditions may decrease oxygen levels in the patient and can even lead to respiratory failure.[6,7] In the long term, these complications may impair lung function, increase the risk of infections, and negatively affect the overall recovery process.[4,5]

In our patient, the slow gastric emptying following esophagectomy led to the development of a large stomach within the thoracic cavity. This condition exerted pressure on the lungs, limiting respiratory function.

Complications following esophagectomy and other major surgical interventions are serious health issues that require accurate diagnosis and treatment. Patients should be evaluated not only based on the diagnostic results, but also through careful consideration of their medical history and surgical background. This approach helps prevent unnecessary interventions and complications. Early diagnosis and appropriate treatment play a critical role in the management of postoperative complications.

Author contributions

Author E.S.T., O.T., and N.O. have given substantial contributions to the literature search, data collection, study design, analysis of data, manuscript preparation, analysis interpretation of the data and review of manuscript. All authors have participated in drafting the manuscript, author E.S.T. and O.T. revised it critically. All authors read and approved the final version of the manuscript.

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Data availability statement

The data of this study were obtained from the patient database of Recep Tayyip Erdogan University Faculty of Medicine. The data can be shared if the corresponding author is reached via e-mail.

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Conflicts of interest

There are no conflicts of interest.

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