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Asymptomatic Diaphragmatic Hernia Diagnosed after Six Years Following Esophagectomy: A Case Report

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ABSTRACT

Diaphragmatic hernia, secondary to transhiatal esophagectomy, appears to be a relatively infrequent diagnosis. Patients may be asymptomatic or present with various symptoms. Diagnosis of this condition requires a high index of suspicion. The most common cause of diaphragmatic hernia is widened esophageal hiatus during surgery; therefore, narrowing the hiatus can prevent conduit herniation. Herein, we present the case of a 65-year-old man, who underwent transhiatal esophagectomy and gastric pull-up for squamous cell carcinoma six years ago. The patient was asymptomatic and diaphragmatic hernia was detected unexpectedly in the surveillance follow-up interval. In the present report, we also aimed to discuss the risk factors, as well as preventive and treatment methods.

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Introduction

Transhiatal esophagectomy is a well-known procedure for both benign and malignant esophageal diseases (1). Although diaphragmatic hernia due to surgical traumas appears to be a relatively infrequent diagnosis, early detection is of grave significance. Delayed diagnosis may result in the strangulation and perforation of herniated contents (2, 11), leading to high mortality rates following emergency surgeries (3).

Herein, we report a case of asymptomatic hernia after transhiatal esophagectomy and discuss the preventive and treatment methods.

Case report

A 65-year-old man underwent transhiatal esophagectomy and gastric pull-up. Feeding jejunostomy was performed for esophageal squamous cell carcinoma with manual dilatation of esophageal hiatus and fixation of the conduit to diaphragm in August 2009.

The patient was routinely followed-up by an oncologist, and no symptoms were observed.

The final chest X-ray was requested in February 2015 (Figure 1). In further evaluations, chest CT scan indicated diaphragmatic hernia (Figure 2). The patient was referred to a surgeon and herniation of the small bowel was confirmed in barium study (Figure 3). Based on the obtained findings, the patient was a candidate for surgery.

A 3 cm diaphragmatic defect with herniation of the small bowel to the left hemithorax was found during laparotomy. The herniated segment of the bowel was reduced and diaphragmatic hiatus was repaired and fitted around the pulled-up conduit with sutures. The patient was discharged from the hospital five days after the surgery.

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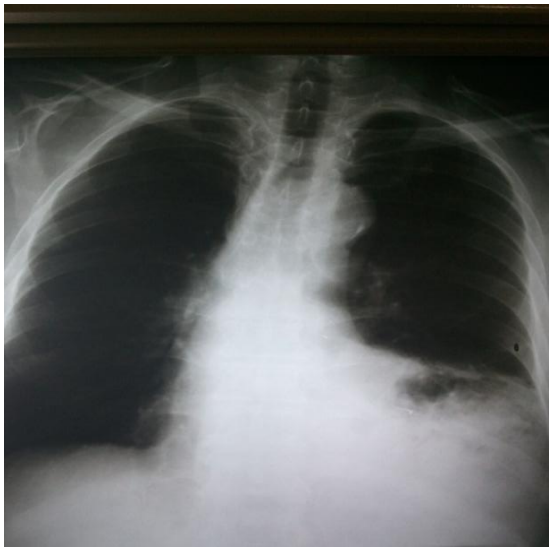

Figure1. Consolidation in lower zone of left lung

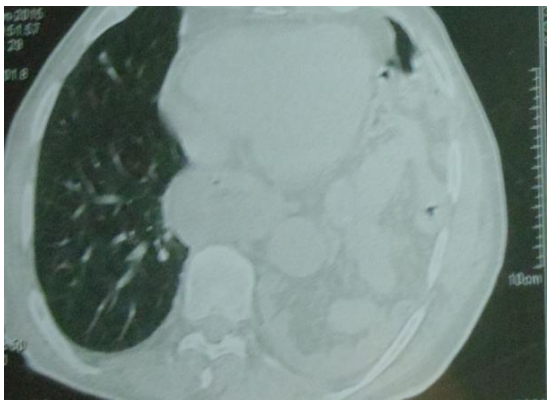

Figure 2. Herniation of conduit in left hemithorax in CTscan

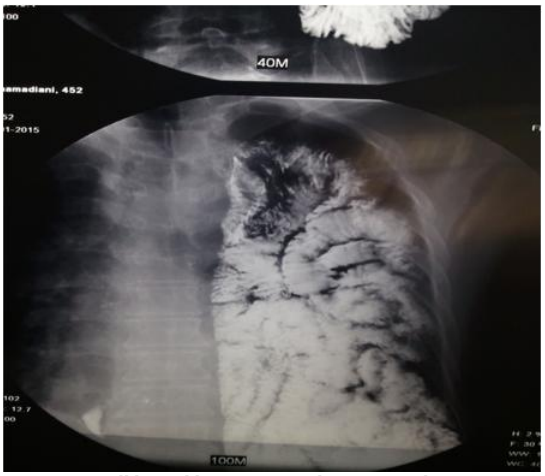

Figure 3. Small bowel herniation in barium study

Discussion

The incidence rate of diaphragmatic hernia, following esophageal cancer surgery, has been estimated at 0.3-4% (4, 5). However, the incidence of asymptomatic hernia may be higher (5). These hernias may present immediately after surgery (within one week) or up to 2-7 years after the procedure (5, 7).

Patients may be asymptomatic or present with symptoms of respiratory distress, intestinal obstruction, fever, chest pain, cough or lower gastrointestinal bleeding (8, 9). Diagnosis of this condition requires a high index of suspicion. Delayed diagnosis may lead to the perforation of the bowel and high mortality rates (5).

Plain chest X-rays are useful for diagnostic purposes (7, 9, 10). Moreover, contrast X-rays can confirm the presence of bowel loops in the chest (10). When diaphragmatic hernia is diagnosed, surgery is usually recommended to prevent potential complications such as strangulation or perforation (6, 11). Based on the majority of published reports, transabdominal approach is preferable to other techniques; accordingly, this approach was applied in the present case. Other researchers have advocated thoracotomy in case of extensive abdominal adhesion (11).

Diaphragmatic hernia requires surgical reduction of the herniated bowel and repair of the diaphragmatic defect to prevent obstruction or strangulation of the contents, Also, bowel resection may be required in case of ischemia. The diaphragmatic defect is narrowed to fit the conduit either primarily or by use of a mesh (5-7, 9, 15).

Retrosternal reconstruction with closure of the hiatus is understandably the ideal approach for the prevention of diaphragmatic hernia. However, there are controversies regarding the optimal procedure for preventing hernia, following mediastinal reconstruction. Some surgeons recommend anchoring the stomach anteriorly to the hiatus (14), as conducted in the present case.

Overall, the main cause of this postoperative complication may be the extensive blunt dissection of the hiatus during esophagectomy (12). Interestingly, there are very few reports of herniation into the right chest. However, the reason for the left predominance is still undetermined (13).

Conclusion

Diaphragmatic hernia after esophagectomy is a rare finding and may be severe in some cases. Herniation mostly develops into the left chest and involves the small bowel. Hiatus should be closed enough around the conduit to prevent the recurrence of hernia and ischemia of the conduit. It is recommended that chest X-rays be performed in surveillance intervals, even in disease-free patients.

Conflict of Interest

The authors declare no conflict of interest

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