Image

DOI: 10.6966/EDMJ.202103_8(1).0005

Difficulty in Intraoperative Gastric Decompression Caused by a Hiatus Hernia

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Case Report

A 26-year-old severely scoliotic woman (Height: 150 cm; Body weight: 56 kg) presented to the emergency department with diffuse abdominal pain and anorexia for two days. The diagnosis was right ovarian teratoma with torsion for which emergent oophorectomy was arranged. Preoperative chest radiograph and computed tomographic scan showed a large bulbous mass in left hemithorax displacing mediastinal structures to the right compatible with the diagnosis of a hiatus hernia (Fig. 1A & 1B). Because of abdominal distention, gastric decompression was attempted through placement of a nasogastric tube (NGT) before her transfer to the operating room. In the operating room, the patient was alert without respiratory distress with a respiratory rate of 15 breaths/min. She had a blood pressure of 122/72 mmHg, pulse rate of 107 beats/min, and oxygen saturation of 97% on room air. Tracheal intubation was performed without complications after rapid sequence induction with the maximum airway pressures between 20 and 25 cmH_2O under mechanical ventilation.

Through a low transverse abdominal incision, the gynecologist found dilated bowel loops that impeded the procedure and informed the anesthesiologist of the need for gastric decompression, which was unsuccessful after several attempts. On suspicion of NGT misplacement, it was replaced with another NGT (16Fr Salem Sump; Covidien, Mansfield, Massachusetts) but advancement of the tube to the stomach failed despite using the split endotracheal tube-assisted technique.[1] Resistance was noted when the tube was inserted to the mark of 45 cm at the level of the nostrils. On suspicion of hiatal hernia-induced anatomical distortion of the esophagogastric junction, general surgeon was consulted. After making an upper midline abdominal incision, the tip of the NGT was manually guided into the stomach for decompression through which 900 mL of fluid was drained. Right oophorectomy was then performed uneventfully. The surgeon decided to treat the hiatal hernia conservatively; therefore, the hernia defect was not repaired in this operation. The patient's postoperative follow-up image is shown in Figure 1C. Ten months later, the patient had lost follow-up.

A hiatal hernia is a type of hernia characterized by a protrusion of abdominal organs (typically the stomach) into the thoracic cavity through a diaphragmatic hiatus.[2] The most common risk factors include obesity, older age, major trauma, and certain types of surgery.[2]

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Received: September 10, 2019 Accepted: January 3, 2020
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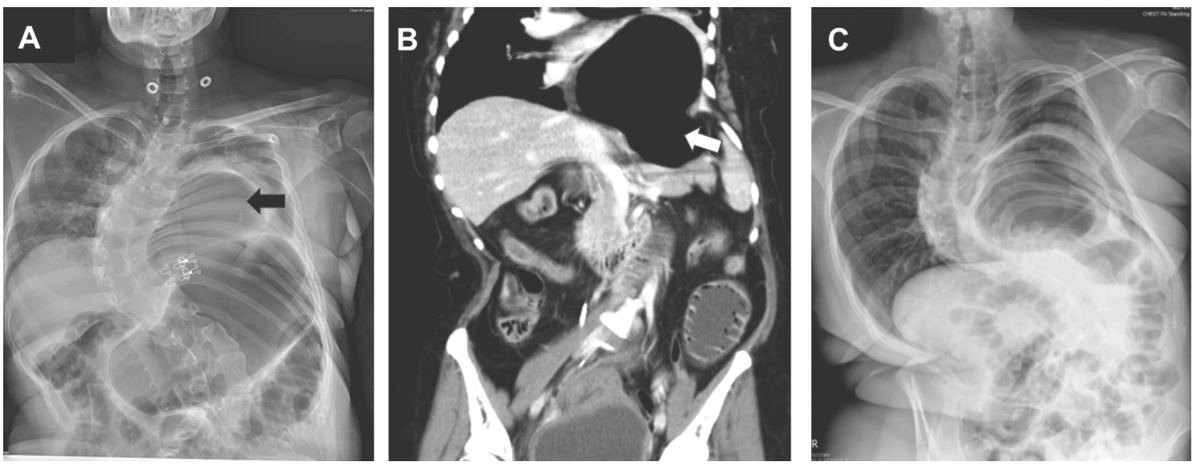

Fig. 1 A sizeable bulbous mass in the left hemithorax displacing the mediastinal structures to the right side demonstrated in (A) preoperative chest radiograph (black arrow), (B) computed tomography scan of the thorax (white arrow), and (C) postoperative chest radiograph.

In addition, kyphoscoliosis may contribute to the development and progression of hiatus hernias.[3] Our scoliotic patient's asymptomatic hiatus hernia was diagnosed incidentally through preoperative imaging studies. As the patient had no previous medical records in our hospital, whether the condition was chronic or acute remained unclear. Our case highlighted several important issues that should be addressed in patients with hiatus hernia undergoing general anesthesia. First, because hiatal hernia is associated with displacement of the gastroesophageal junction that contributes to gastroesophageal regurgitation,[2] bag ventilation before endotracheal intubation may further increase the risk of pulmonary aspiration through air introduction into the stomach. In this situation, rapid sequence induction is recommended. Second, since herniation of the gaseous content of abdominal viscera into the thoracic cavity can result in respiratory and cardiovascular distress,[4,5] gastric decompression is needed before anesthetic induction to decrease the risk of tension gastrothorax from manual ventilation. A previous study has suggested that gastric decompression through NGT placement may be lifesaving in the prevention of tension gastrothorax whenever cardiopulmonary distress occurred in this patient population.[4] Third, taking into account the importance of gastric decompression and the likeliness of NGT misplacement due to the distorted gastroesophageal anatomy in these patients, correct NGT placement should be confirmed both clinically and radiographically. In conclusion, our report demonstrated that gastric decompression through NGT placement, which is crucial to surgical success and could be life-saving, may be difficult in patients with hiatus hernia. The finding underscores the importance of verifying correct NGT placement before anesthetic induction as an essential step in enhancing safety in this specific patient population.

Declaration of Interest

The authors declare that they have no conflicts of interest related to the subject matter or materials discussed in this article

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