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Maternal Diaphragmatic Hernia in Pregnancy and Gastric Herniation and Ischaemia

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Abstract

Presentation

We present the unusual case of a 35-year-old (gravida 3, para 1), 29 + 2 weeks pregnant lady who was referred to our hospital for a suspected pulmonary embolism & drainage of a left sided pleural effusion.

Diagnosis

Subsequent imaging revealed herniation of the gastric fundus through a defect in the posteromedial aspect of the left diaphragm, with features concerning for ischaemia.

Treatment

An urgent laparoscopic exploration was undertaken revealing two thirds of her proximal stomach had herniated through a defect in the left dome of the diaphragm, which was grossly ischaemic was resected with a gastro-gastric anastomosis to restore continuity. Post-operatively, she recovered well and delivered a healthy baby at 35 weeks.

Discussion

This case highlighted the paucity of literature regarding the management of diaphragmatic hernias in pregnancy and the importance of the multi-disciplinary team in the management of same.

Introduction

A diaphragmatic hernia is described as a protrusion of abdominal contents into the thoracic cavity due to a defect within the diaphragm. It can be classified as congenital, acquired, traumatic or mixed type[1,2]. The earliest descriptions of diaphragmatic hernias in the literature

are by Sennertus in 1541 & Pare in 1579[3], respectively, with the earliest recorded repair of same in the 1800s by Riolfi and Naumann[4].

Diaphragmatic hernias are an exceedingly rare occurrence in pregnancy; with only 158 such cases described in the literature between 1911 to 2020. The presentation is highly variable for same; from entirely asymptomatic to life-threatening organ ischemia, perforation, gangrene or necrosis with a maternal mortality rate of 12% and fetal mortality rate of 14%[5].

Currently there is a paucity of data in the literature regarding the optimal management of these patients.

Case Report

We present the case of a 35-year-old, 29 + 2 weeks pregnant lady who presented to a maternity hospital with acute onset left upper quadrant and pleuritic type chest pain associated with dyspnoea, nausea, and vomiting. The current pregnancy was a result of in vitro fertilisation and her background history was significant for polycystic ovarian syndrome and endometriosis for which she had previously had two diagnostic laparoscopies. She had no history of trauma or prior similar symptoms.

Foetal assessment was unremarkable and she was transferred to our hospital for work up of pulmonary embolism. Instead, the CT-PA revealed herniation of gastric fundus through a defect in the posteromedial aspect of the left diaphragm. The gastric wall was poorly enhancing, indicative of ischemia.

An urgent laparoscopic exploration was undertaken showing two thirds of her proximal stomach had herniated through a defect in the left dome of the diaphragm. The defect was enlarged to reduce the stomach in the abdominal cavity. The fundus and proximal half of stomach along the greater curve were grossly ischaemic. The cardia along the lesser curve and the distal half of the stomach was healthy. The ischaemic and necrotic portions of the stomach was resected and a gastro-gastric anastomosis performed to restore the continuity. A roux-en-y reconstruction was avoided which would have increased the complexity of the procedure with a gravid uterus and could lead to long term complications of its own including malnutrition.

The patient resumed oral fluids after 24 hours and progressed on to soft diet at 48 hours. Supplemental total parenteral nutrition was given during the initial post-operative period to ensure adequate caloric intake with her pregnancy. Foetal well-being was continuously monitored during her inpatient stay by the obstetric team. She was successfully discharged at one week post-operatively.

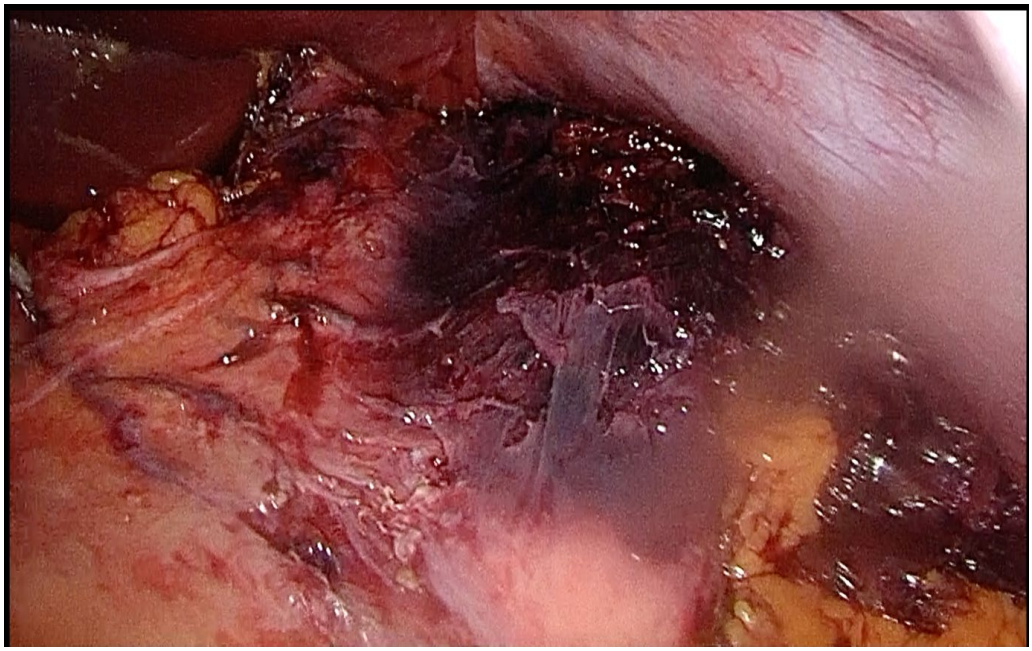
An elective C section was planned at term to avoid diaphragmatic rupture secondary to the high intra-abdominal pressure experienced during labour. However, she developed

premature labour at 35 weeks and had a C-section to deliver a healthy baby. She was well at six month follow up, maintaining her weight with no significant reflux or dyspepsia symptoms reported.

Discussion

Risk factors can be patient-related, such as hypertension, connective tissue disorders (such as Marfan's syndrome), vascular disorders and genetics[6]. There are also several pregnancy-related risk factors such as the gravid uterus and constipation causing excess intra-abdominal pressure, as well as rising progesterone levels leading to smooth muscle relaxation.

A high index of clinical suspicion should exist for patients who possess these risk factors in the appropriate clinical setting. Early imaging and expeditious surgical intervention can mitigate the need for a complete resection and avoid the potential for lifelong malnutrition associated with total gastrectomies. The clinical alliance of medical, surgical, radiological, anaesthetic and obstetric specialties ensures the patient is afforded the best possible care in this unusual case.



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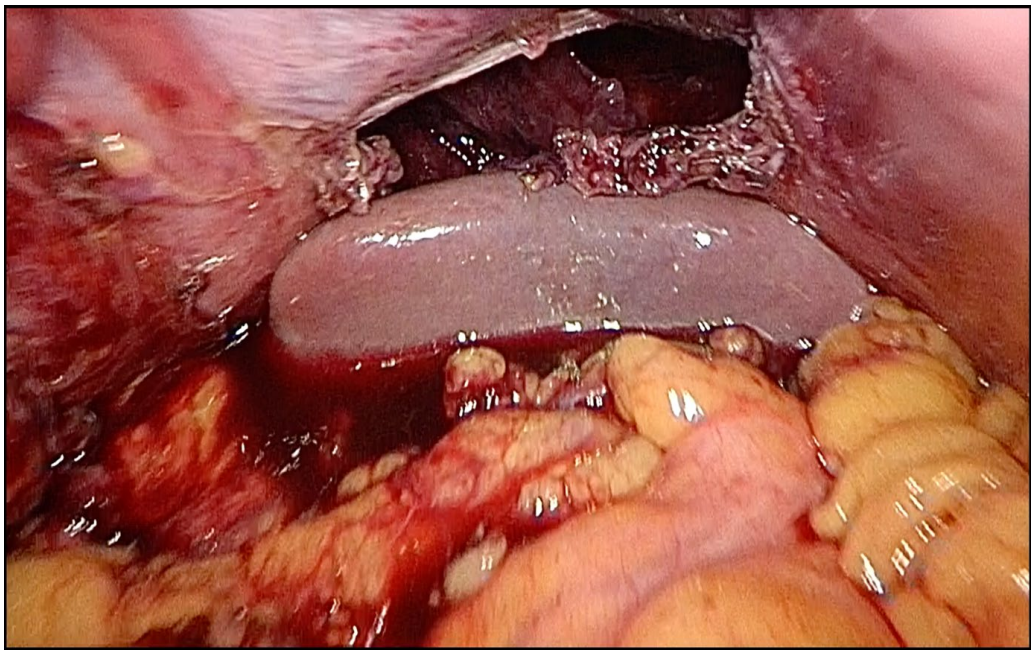

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