Diaphragmatic hernia after cesarean section masquerading as hydropneumothorax

Madam,

Diaphragmatic hernia (DH) of nontraumatic origin in adults is detected incidentally, and surgery may be indicated due to or to avoid complications.[1] Pregnancy may unusually be associated with DH,[2-4] with only 30 cases being reported between 1959 and 2009.[3]

A 25-year-old primigravida presented on the 3rd postoperative day from the peripheral hospital with breathlessness at rest, partly relieved on sitting. She had undergone uneventful emergency cesarean section under spinal anesthesia. Antenatal period and past history were insignificant, except for complaints of dyspepsia. Chest X-ray revealed air-fluid level over left chest [Figure 1a]. Her pulse rate was 100 beats/min, blood pressure 106/74 mm Hg, respiratory rate 26/min, and oxygen saturation (SpO_2) was 94% on room air. Air entry was markedly reduced over left lung fields. Cardiac auscultation was unremarkable. Routine investigations were normal. Intercostal drainage (ICD) tube (no. 28 F) was inserted in left 5th intercostal space in midaxillary line, under infiltration anesthesia [Figure 1b]. Active bubbling of air underwater was observed with respiration. SpO_2 improved to 98% on room air, but the air entry on the left side continued to be less. Tramadol (50 mg) was administered intramuscularly for post procedure pain relief. An hour later, the patient

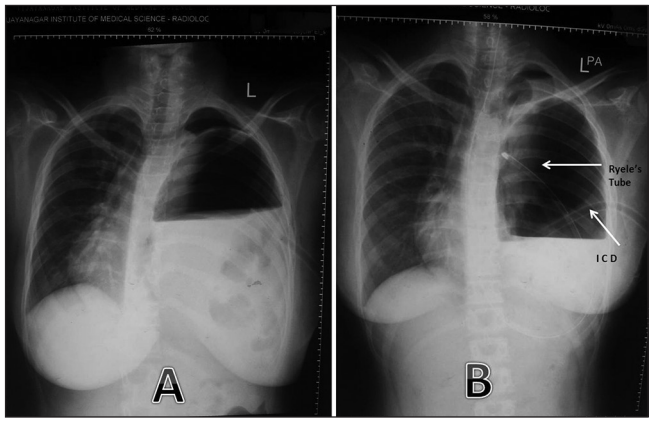

Figure 1: (a and b) Plain X-ray chest and Ryle's tube and intercostal drainage *in situ*

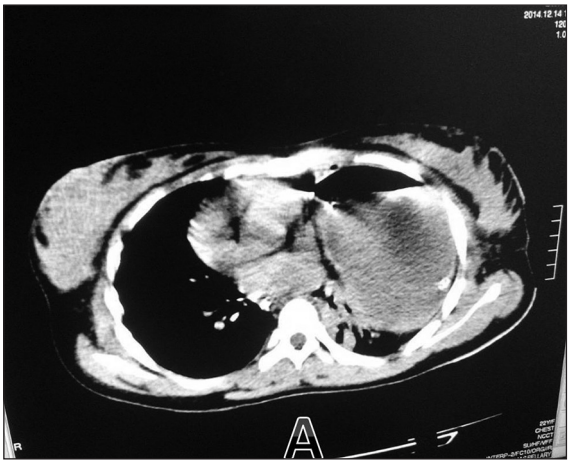

Figure 2: Stomach in the left thoracic cavity

developed vomiting; she was kept nil per oral. Vomiting was suspected to be drug induced, and tramadol was discontinued. Pantoprazole and ondansetron were started intravenously. Nasogastric tube (NGT) (no. 16) was passed, till 80 cm mark without resistance. Chest X-ray showed NGT curving up into the chest from esophagus [Figure 1b]. Computed tomography (CT) scan showed the presence of DH (left) with stomach occupying almost the whole of the hemithorax and mediastinal shift. The NGT was found *in situ* inside the stomach, and the ICD tube was also found properly positioned [Figure 2]. The hernia was repaired the next day under general anesthesia with rapid sequence induction; nitrous oxide was avoided. The course of anesthesia and surgery was uneventful. The ICD was removed on the 3rd postoperative day.

The occult hernia may be revealed for the first time during pregnancy due to increase in intra-abdominal pressure, especially during labor.[4] The trial of labor in the present case may have contributed to the development of breathlessness; it was however seen to precipitate after the CS.

Inserting the ICD appeared to be a dangerous exercise in the present case, but the vagueness of symptoms and the (mis) diagnosis on X-ray findings guided us to insert ICD. Vomiting, the fortuitous, harmless positioning of the ICD bypassing the stomach within the thorax and inadequate improvement after ICD insertion led us to order the CT and thus arrive at the final correct diagnosis of DH. The NGT was found to pass in for adequate length and gastric secretions including bile could be aspirated. Use of antiemetics could have delayed diagnosis. DH during pregnancy can be repaired intra- or post-partum depending on severity, pregnancy and fetal status. Spontaneous rupture of the diaphragm during delivery is described.[5] This report emphasizes the need to have a high index of suspicion of DH when patients present with vague symptoms with X-ray evidence of hydropneumothorax, and it is advisable to obtain CT.

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Conflicts of interest
There are no conflicts of interest.

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