

## Combined Pneumomediastinum and Pneumothorax Due to Hyperemesis Gravidarum

**Authors :** Fayez Hanna, Viet Tran

**Abstract :** A 20 years old lady- primigravida 6 weeks pregnant with unremarkable past history, presented to the emergency department at the Royal Hobart Hospital, Tasmania, Australia, with hyperemesis gravidarum associated with, dehydration and complicated with hematemeses and chest pain resistant. Accordingly, we conducted laboratory investigations which revealed: FBC: WBC 23.9, unremarkable U&E, LFT, lipase and her VBG showed a pH 7.4, pCo2 36.7, cK+ 3.2, cNa+ 142. The decision was made to do a chest X-ray (CXR) after explaining the risks/benefit of performing radiographic investigations during pregnancy and considering the patient's plan for the termination of the pregnancy as she was not ready for motherhood for shared decision-making and consent to look for pneumoperitoneum to suggest perforated viscus that might cause the hematemeses. However, the CXR showed pneumomediastinum but no evidence of pneumoperitoneum or pneumothorax. Consequently, a decision was made to proceed with CT oesophagography with imaging pre and post oral contrast administration to identify a potential oesophageal tear since it could not be excluded using a plain film of the CXR. The CT oesophagography could not find a leak for the administered oral contrast and thus, no oesophageal tear could be confirmed but could not exclude the Mallory-Weiss tear (lower oesophageal tear). Further, the CT oesophagography showed an extensive pneumomediastinum that could not be confirmed to be pulmonary in origin noting the presence of bilateral pulmonary interstitial emphysema and pneumothorax in the apex of the right lung that was small. The patient was admitted to the Emergency Department Inpatient Unit for monitoring, supportive therapy, and symptomatic management. Her hyperemesis was well controlled with ondansetron 8mg IV, metoclopramide 10mg IV, doxylamine 25mg PO, pyridoxine 25mg PO, esomeprazole 40mg IV and oxycodone 5mg PO was given for pain control and 2 liter of IV fluid. The patient was stabilized after 24 hours and discharged home on ondansetron 8mg every 8 hours whereas the patient had a plan for medical termination of pregnancy. Three weeks later, the patient represented with nausea and vomiting complicated by a frank hematemeses. Her observation chart showed HR 117- other vital signs were normal. Pathology showed WBC 14.3 with normal U&E and Hb. The patient was managed in the Emergency Department with the same previous regimen and was discharged home on same previous regimes. Five days later, she presented again with nausea, vomiting and hematemeses and was admitted under obstetrics and gynaecology for stabilization then discharged home with a plan for surgical termination of pregnancy after 3-days rather than the previously planned medical termination of pregnancy to avoid extension of potential oesophageal tear. The surgical termination and follow up period were uneventful. The case is considered rare as pneumomediastinum is a very rare complication of hyperemesis gravidarum where vomiting-induced barotrauma leads to a ruptured oesophagus and air leak into the mediastinum. However no rupture oesophagus in our case. Although the combination of pneumothorax and pneumomediastinum without oesophageal tear was reported only 8 times in the literature, but none of them was due to hyperemesis gravidarum.

**Keywords :** Pneumothorax, pneumomediastinum, hyperemesis gravidarum, pneumopericardium

**Conference Title :** ICEM 2023 : International Conference on Emergency Medicine

**Conference Location :** Bangkok, Thailand

**Conference Dates :** December 18-19, 2023