

INTRODUCTION

Recurrent spontaneous pneumothorax is an unusual condition in pregnancy. This condition is potentially life threatening for mother and fetus. The prevalence of pneumothorax in pregnancy is low and so far, only 56 literatures has been reported. The challenge of managing pneumothorax in pregnancy begins with prompt and accurate diagnosis as sudden respiratory collapse may lead to serious maternal morbidity and mortality. The diagnosis of pneumothorax should be excluded in any pregnant woman who experience chest pain and dyspnea.

CASE REPORT

We present a case of 27 years old, Malay, Gravida 2 Para 0+1, presented to our center at 23 weeks of gestation with complaint of dyspnea and chest pain. She conceived via intrauterine insemination (IUI) after 4 years of subfertility. She is a non-smoker; she has no family history of lung disease, and her BMI was 27 kg/m² during booking. Upon assessment, she was tachypneic, SPO₂ under room air 90% with hyper resonant on percussion and reduced air entry upon auscultation over right lung. Chest X-ray revealed right pneumothorax. A chest tube was inserted, and she was admitted for 3 days. Chest tube was removed and was given outpatient appointment to chest clinic.

Unfortunately, during Combine clinic review at 30 weeks of gestation, symptoms recur, and chest tube re-inserted again for recurrent right pneumothorax. In ward, we unable to wean off the chest drain as she develops recurrent pneumothorax following removal. High Resolution Commuted Tomography (HRCT) done and revealed right pneumothorax with ruptured bullae. Pneumostat was inserted and patient was discharged well.

A multidisciplinary meeting was done, and case was referred to cardiothoracic surgeon. Apart from cardiothoracic team, anasthesia team, medical team and paediatrics team was also involved. During the MDT, patient was planned for conservative management and pleurodesis was suggested after delivery to avoid the risk of general anesthesia and preterm delivery. Delivery was planned at 38 weeks via caesarean section in view of her history of subfertility.

Patient delivered via caesarean section at 36 weeks of gestation as she presented with worsening symptom and with preterm labor. She was discharged home well post operative with follow up with cardiothoracic team post-partum.

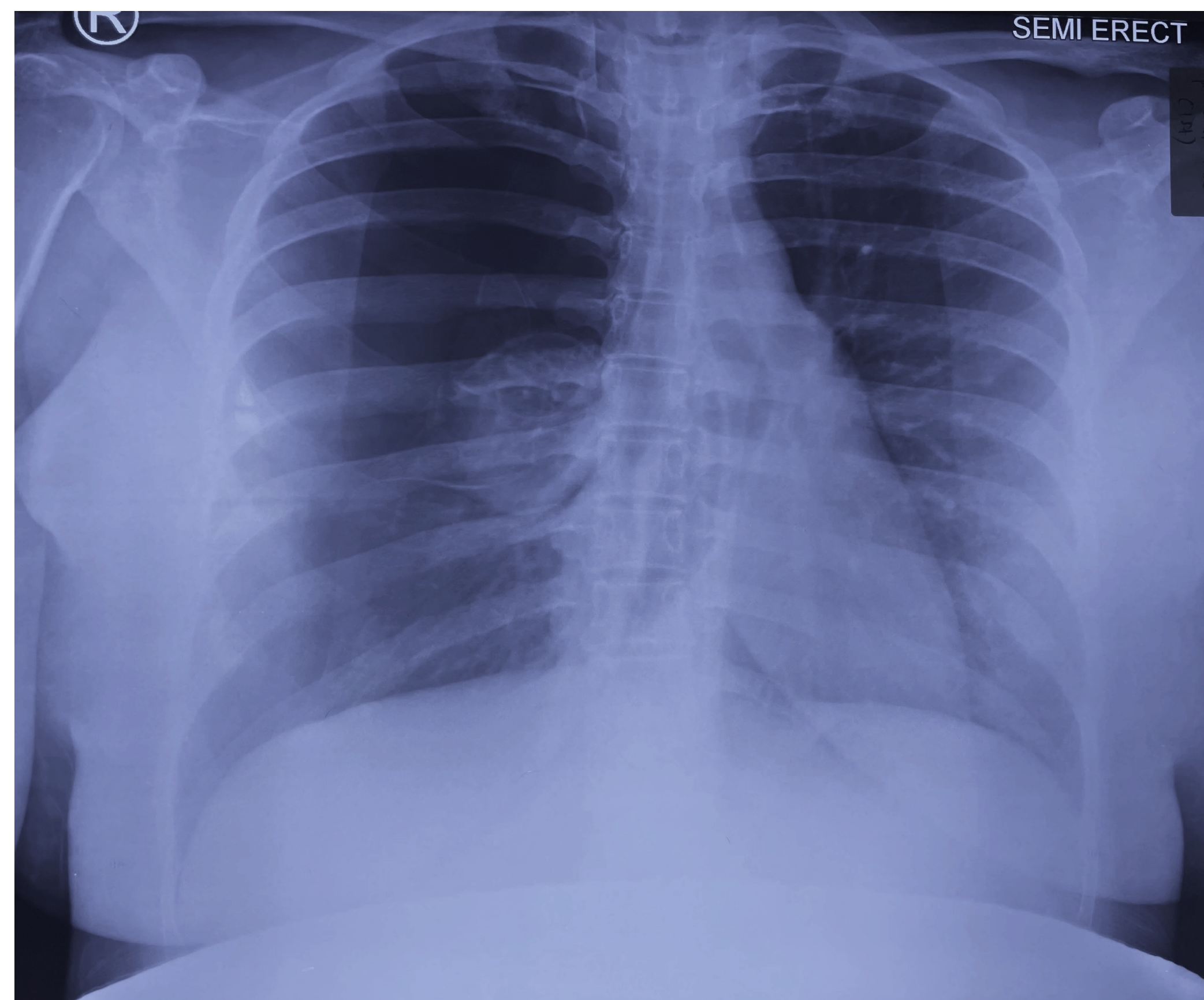


Figure 1: Chest x-ray, right pneumothorax

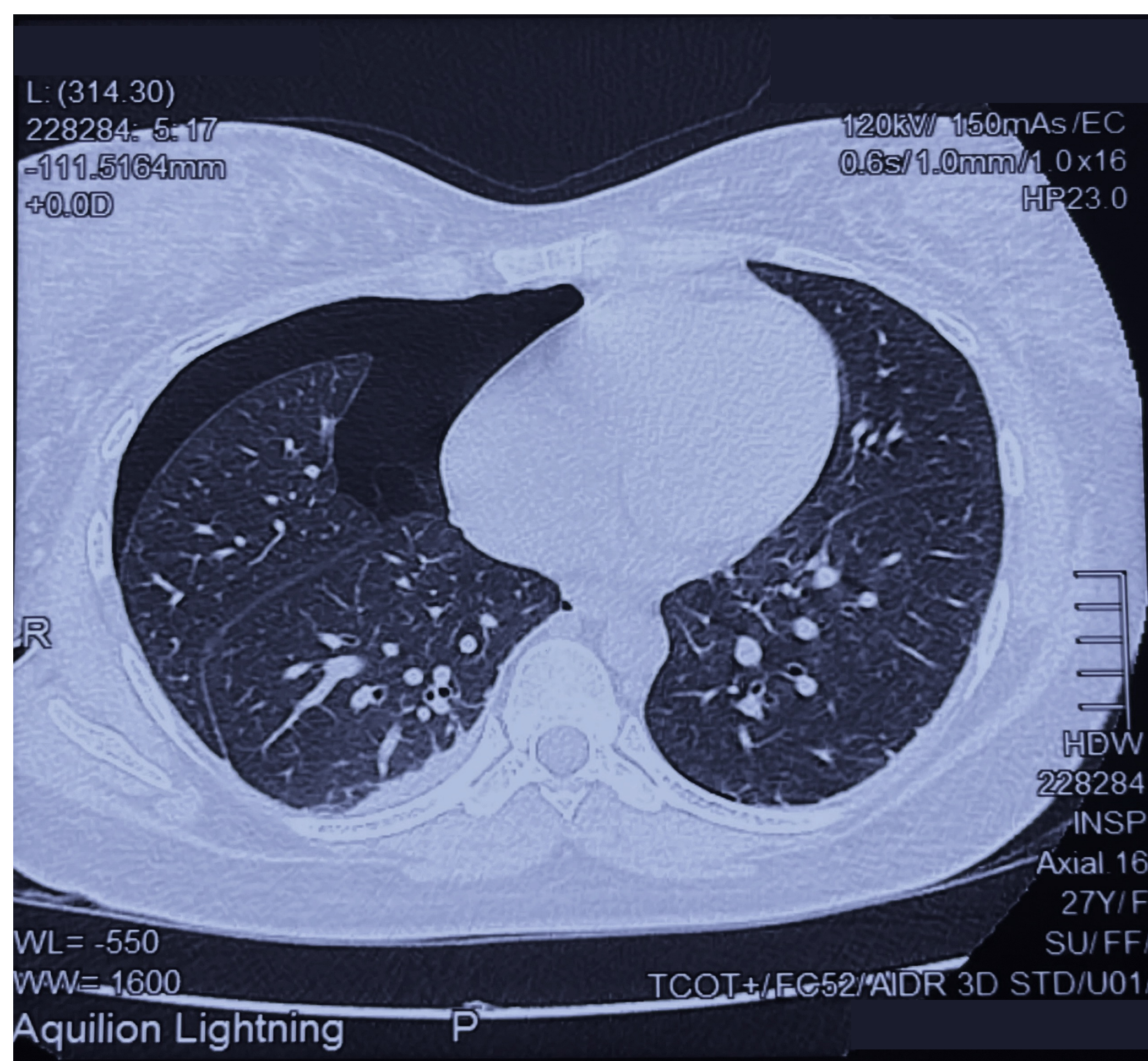


Figure 2: HRCT showing right pneumothorax with ruptured bullae

DISCUSSION

Spontaneous pneumothorax during pregnancy defined as presence of air in the pleural cavity due to rupture of small apical blebs or bullae in the absence of a significant pulmonary disease or trauma. There were few literatures and retrospective studies done, only small number of patients affected with spontaneous pneumothorax (5 out of 250 patients). Prevalence of recurrent symptomatic pneumothorax from first presentation in pregnancy has been reported to be high.

Risk of recurrence is about 30% to 40% during labor. Most of the literatures has reported case in 2nd and 3rd trimester. Spontaneous pneumothorax can occur in 25% in first trimester, 22% in second trimester and 53% in the third trimester.

The most common cause of spontaneous pneumothorax is rupture of bullae. The physiological change during pregnancy may partly contributes to the rupture of the bullae. Other risk factors including asthma, hyperemesis gravidarum, history of previous pneumothorax, alpha-1 antitrypsin deficiency, cocaine use, lung endometriosis and infections. Clinical manifestation may mimic minor ailment in pregnancy such as hyperventilation syndromes. However, chest pain and dyspnea may require suspicions of pneumothorax in working diagnosis.

Diagnosis of pneumothorax can be established with clinical symptoms and chest radiography. Chest radiography with abdominal shield has been reported safe in pregnancy without placing any substantial risk to the fetus. Our patient had significant left-sided pneumothorax up to mid zone of the lung which was diagnosed via a chest radiography. HRCT may play a role to diagnose a rupture bullae and extension of the pneumothorax. HRCT also gives precise information on lung parenchyma compared to CT thorax.

Management of spontaneous pneumothorax in pregnancy with chest tube insertion or need aspiration is similar with general population. Few case series reported that safest approach for delivery will be through assisted vaginal delivery with epidural anesthesia. This mode of delivery has shown excellent outcome. Definitive management for recurrent pneumothorax is via chemical pleurodesis. Talc pleurodesis has reported lowest risk of recurrence which is about 8%. Other recommended surgical interventions would be open thoracotomy with pleurectomy, VATS with pleurectomy and pleural abrasion.

There are no specific criteria for initiation of surgical intervention in pregnancy although there are reported cases with good outcome. Thus, surgical interventions considered post-delivery.

Our patient recovered well after the chest tube; however, the symptoms recur after one month of first presentation. This can be due to as increasing gestational age approaching to third trimester that may warrant early delivery. Multidisciplinary team approach is vital in managing this case in which require best strategy plan for antenatal, intrapartum, and postpartum care. Recurrent chest tube insertion may give significant risk of infection to the patient, thus option of pigtail insertion or pneumostat able to insert to relieve the pneumothorax and SPO₂ maintained throughout her second ward admission.

We managed to prolong the pregnancy up to 35 weeks after recurrent pneumothorax attack. Caesarean section was done for worsening symptomatic pneumothorax and she delivered healthy baby boy with birthweight of 2.8kg with good Apgar score.

CONCLUSION

Multidisciplinary team approach is vital in managing pneumothorax in pregnancy. Surgical intervention should better be avoided in pregnancy to reduce the complications of preterm delivery but there also has been successful surgical intervention reported with no complications. Meanwhile, conservative management gives similar outcome. Spontaneous vaginal delivery has been reported to be safe.

REFERENCE

- 1.Mohamed Faisal, Hazwani, Soo Chuan Ian,Recurrent spontaneous pneumothorax during pregnancy managed conservatively,: A case report, Med J Malaysia Vol 71 No 2 April 2016
- Bachar Manav, Fotini, Nikoleta, Recurrent pneumothorax in pregnant woman with family history of spontaneous pneumothorax, Ann Med Medical Res. 2018; 1: 1018
- Noman Later, Mustafa Dawood, Recurrent spontaneous pneumothorax in pregnancy- a literature review, journal of community internal medicine perspective 2018, Vol 8, No 3, 115-118
- Sills ES, Meinecke HM, Dixon GR, et al. Management approach for recurrent spontaneous pneumothorax in consecutive pregnancies based on clinical and radio- graphic findings. J Cardiothorac Surg. 2006;1:35.