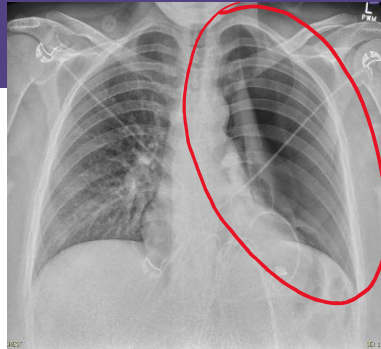


Primary Spontaneous Pneumothorax in pregnancy - a case study from a Regional Centre.

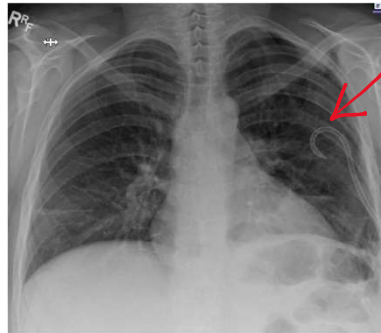
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Introduction: The consensus to not perform routine chest xray (CXR) on pregnant women can sometimes result in delayed or missed diagnoses. Interpretation of CXR and CT pulmonary angiograms (CTPA) can be difficult in women with a gravid uterus and a high diaphragm. The stressed pulmonary system is further tested with the increased blood volume and oxygen requirements of a growing fetus and then the process of labour and delivery. Any insult to this can become life-threatening to the woman and her fetus. We present the case of a spontaneous pneumothorax in a primip without a history of lung disease.

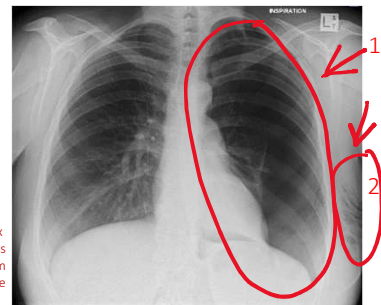
Case: 21-year-old G1P0 K35 presented to a regional emergency department with pleuritic chest pain and shortness of breath. Pulmonary embolus was deemed unlikely given normal bilateral lower limb USS, a CTPA was not performed. A small apical pneumothorax was identified on CXR but re-presented with worsening shortness of breath at K37. A large left pneumothorax was noted, and an intercostal catheter inserted to reduce it. Her recovery was closely monitored by the respiratory team. Fetus had normal CTGs and ultrasound scans. Plan was made for urgent delivery, as now early term, maternal risk was increased. She had significant pain, reduced breathing effort due to this and immobility. All of which increased her risk of infection, venous thrombus embolus (VTE) and RDS. With maternal request she was delivered via Caesarean section at K38+0 (with APGARs of 8 and 8, requiring CPAP for work of breathing at birth – no NICU/ SCN admission) in order to avoid Valsalva, cardiac and respiratory distress.



CXR PA- LEFT Pneumothorax



Intercostal drain in AP and PA showing restriction in interpretation of LEFT chest on Xray in pregnant women



PA – Postnatal re-presentation

1) Pneumothorax
2) Subcutaneous emphysema - ?from drain site

Her background was significant for ex-smoker (quit at start of pregnancy, occasional vaping), BMI >30 and family history of Factor V Leiden and Protein C deficiency. She had no known lung disease/ Marfans or any other congenital disorder and no history of trauma. She had tested negative for FVL. She recovered well post caesarean section and discharged day 2 postop after ICC removed, with maintained reduction in Left pneumothorax. She did re-present approximately 2 weeks later with recurrent pneumothorax without infective symptoms or VTE findings. She was transferred into the care of her private respiratory specialist. She had returned to usual activities at her 2-month phone review.

Important factors:

- Smoking increases the risk of pneumothorax¹
- True number of this pathology in pregnancy is likely underestimated²
- A small pneumothorax without symptoms can be monitored with simple observation under the care of a respiratory, cardiothoracic and obstetric multi-disciplinary team
- Aspiration is recommended if symptomatic or moderate to large
- Elective assisted delivery is recommended with regional anaesthesia (epidural) with forceps being preferable if aiming vaginal birth., though some studies prefer elective caesarean

Conclusion:

Spontaneous primary pneumothorax is an uncommon, but potentially life and fetus threatening condition. Pregnant women are at higher risk of delay or missed diagnosis. While early intervention, close monitoring and delivery planning are essential part of the management. It is imperative that guidelines are created specifically for pregnant women in order to optimise their diagnosis, management and outcomes.

References:

1. Macduff, Andrew et al, (2010) Management of spontaneous pneumothorax: British Thoracic Society pleural disease guideline 2010. BMJ (65 (2)). DOI: <http://dx.doi.org/10.1136/thx.2010.136986>
2. Agrafiotis, et.al, (2021) Pneumothorax and Pregnancy: A Systematic Review of the Current Literature and Proposal of Treatment Recommendations. Thorac Cardiovasc Surg. 2021 69 (1):95-100. doi: 10.1055/s-0040-1702160.