

Background

Spontaneous pneumomediastinum (Hamman's syndrome) is a rare complication of labour and delivery with an estimated incidence of 1 in 100 000 deliveries¹. Pneumomediastinum is defined as the presence of free air in the mediastinal cavity and is usually the result of trauma or pre-existing pulmonary conditions, though may also occur through physiological processes¹.

We present a case report that elucidates the typical clinical features, imaging findings and management of this rare syndrome.

Case Report

A 21 year old primigravida spontaneously laboured at 37+6 weeks gestation. She had no significant antenatal risk factors and used an epidural for pain relief in labour. She progressed to vacuum-assisted delivery of a 2.9kg infant for maternal exhaustion and abnormal maybe CTG after 90 minutes of pushing.

The patient was reviewed on day one post delivery, and reported non-radiating retrosternal chest pain and upper neck pain that began shortly after delivery along with mild shortness of breath. She was otherwise systemically well with observations within normal limits. On examination, her pain was not reproducible on palpation and lungs were clear on auscultation. There was widespread palpable crepitus over the anterior chest and neck. ECG demonstrated normal sinus rhythm.

Chest x-ray revealed pneumomediastinum with gas outlining the outer wall of left main bronchus and trachea, and at the left bronchopulmonary window extending into the superior mediastinum. Subcutaneous emphysema is evident in the right axilla and neck (figure 1). Subsequent CT with oral contrast confirmed moderate volume pneumomediastinum extending to neck base and right axilla, in addition to a small left apical pneumothorax (figure 2). There was no oesophageal perforation.

Treatment was conservative with observation. No supplemental oxygen therapy or opioid analgesia was required. Her pain improved during inpatient stay and she was discharged home on day three post delivery without complication.



Figure 1: Erect CXR



Figure 2: CT CAP with oral contrast, coronal + sagittal sections

Discussion

Spontaneous pneumomediastinum is hypothesised to occur from barotrauma related to an increase in alveolar pressure resulting in peripheral alveolar rupture². This is associated with Valsalva manoeuvre in the second stage of labour. High intrathoracic pressures combined with decreased vascular calibre establishes a pressure gradient, allowing air to dissect into the mediastinum and subcutaneous tissues along broncho-vascular sheaths and fascial planes^{2,3}. In the literature, Hamman's syndrome appears to typically present during the second stage of labour or acute postpartum period, and is more frequent in younger, primiparous women with term pregnancies^{1,2}. The course is typically benign and self-limiting, however it is key to rule out other differentials for acute onset chest pain. Patients should be managed conservatively. Oxygen supplementation may be useful. It is unclear whether operative vaginal delivery increases the risk relative to spontaneous delivery.

References

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3. Lou Y. Hamman's Syndrome: spontaneous pneumomediastinum and subcutaneous emphysema during second stage of labour. *Int J Reprod Contracept Obstet Gynecol*. 2017 June 6. Available from <http://dx.doi.org/10.18203/2320-1770.ijrcog20172365>.