

A Case of Postpartum Spontaneous Pneumomediastinum and Subcutaneous Emphysema: known as Hamman's Syndrome

Dr Emma Adams¹, Dr Caitlin Robson-Hamond¹, ¹Bendigo Health

INTRODUCTION

Hamman's Syndrome is a rare (reported incidence of 1 in 100,000), uncommon post partum complication¹. It is the development of spontaneous pneumomediastinum and subcutaneous emphysema, thought to be caused by the Macklin effect. The sudden rise in intra-alveolar pressure (which occurs during extreme Valsalva manoeuvres) can rupture the alveolar walls leading to gas tracking through the interstitium².

Boerhaave Syndrome is a surgical emergency that can present with the same signs and symptoms of Hamman's Syndrome- however, is secondary to a ruptured oesophageal wall that occurs due to a sudden increase in intraluminal pressure (ie from vomiting)³.



Figure 1: Coronal CT View of the head, neck and superior mediastinum at 10 hours post partum demonstrating the severe surgical emphysema in the soft tissue

CASE

A 31-year-old primiparous female was transferred via ambulance in spontaneous labour at 39 weeks gestation to a major regional health centre for delivery. The patient had been referred late in her third trimester to birth at the regional centre, 2 hours from her local rural hospital (GPO run) due to her risk factors of GDM requiring Metformin and a BMI of 38.

The patient had significant vomiting during transfer, which settled after administration of antiemetics. On arrival to the regional centre, her cervix was assessed to be 5cm dilated. She then progressed adequately until 4 hours later, due to CTG signs of fetal distress, a 3-pull vacuum delivery was performed with an episiotomy. Her 2nd stage was a total of 90 minutes. It was an uncomplicated delivery performed on the birthing unit without neuro-axial analgesia. 10 hours post delivery, the patient noted swelling to her neck and "crunching" noises upon opening her mouth. She had no chest pain, dyspnoea or dysphagia. On examination, her observations were stable with normal oxygen saturations, and she was noted to have subcutaneous emphysema and swelling throughout her neck and anterior chest, with the feeling of "bubble wrap" on palpation. After discussion with the general surgical team, she was made nil by mouth and an urgent chest and neck X-ray were ordered (Figure 3).

RESULTS

The X-ray results revealed extensive bilateral neck subcutaneous emphysema and pneumomediastinum, following which a CT Neck and Chest (Figure 1 and 2) were requested to rule out a sinister cause for the extensive surgical emphysema. No sinister cause for the pathology was found on CT scan and the patient was managed conservatively. The surgical team recommended IV antibiotics however, the patient declined these due to concerns with breast feeding. An X-ray performed 2 days later showed resolution of emphysema, and the patient's symptoms were markedly improved.

References

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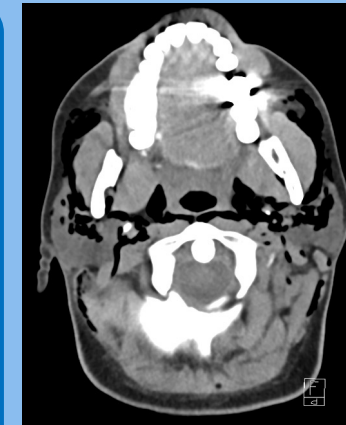


Figure 2: Axial view of the head at the level of C1 demonstrating extensive severe surgical emphysema

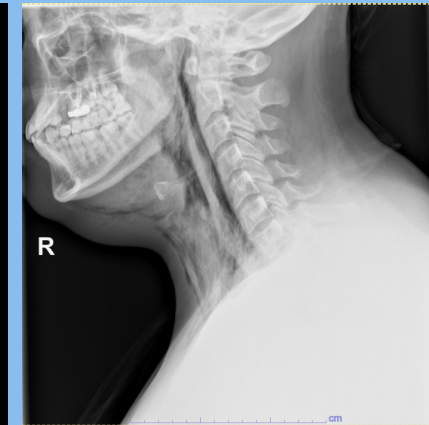


Figure 3: Lateral X-ray of the Neck, demonstrating extensive severe surgical emphysema

DISCUSSION and CONCLUSION

Hamann's syndrome is usually a self-limiting and benign condition that does not require IV antibiotic management. In severe cases, supportive care may be required for symptom management. In rare situations, it can lead to cardiac tamponade⁴. As in this patient's case, in the context of vomiting, clinicians should perform further investigations to exclude Boerhaave syndrome. This potentially life-threatening condition requires prompt recognition and treatment given its mortality of 40-90%⁵.

The rarity of Hamman's Syndrome can lead to misdiagnosis. Making the diagnosis in this case was important as this patient was away from her support network for delivery and wanted to return home as soon as possible. Being able to reassure her this was a self-limiting condition prevented an extended, unnecessary hospital stay.