

# Subcutaneous Emphysema With Pneumomediastinum During The Second Stage Of Labour: A Rare Intrapartum Complication

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## Abstract

**Background:** Spontaneous subcutaneous emphysema with pneumomediastinum is a rare, but potentially dangerous complication of labour. The incidence is estimated to be between 1:2000 to 1:100,000 deliveries.

**Case:** A nulliparous women developed extensive swelling of face & neck along with breathing problem after prolonged second stage of labour. Examination showed severe facial & neck oedema with crepitus. Surgical emphysema with pneumomediastinum was confirmed on chest X-Ray. She was managed conservatively and recovered well in 2-3 days.

**Conclusion:** This condition is usually associated with prolonged second stage of labour. The clinical course is often benign. Management is primarily conservative.

Early recognition followed by appropriate measures to prevent further complications is the key factor to reduce the morbidity & mortality associated with this condition.

## INTRODUCTION

Subcutaneous emphysema & pneumomediastinum although runs a benign course, but fatalities have been reported.

This condition is generally self-limiting; therefore, observation, reassurance & symptomatic treatment with analgesia and oxygen is all that is needed in most cases.

## CASE HISTORY

A 23 year old nulliparous woman presented to the Labour ward at 41 weeks of pregnancy with regular contractions & possible rupture of membranes.

Her antenatal period was uneventful. She was on medication for asthma & was a non-smoker. On examination, she was in early labour with cervix dilated to 3 cm and intact membranes. She was prescribed Entonox for pain-relief throughout the labour. The cervix was fully dilated 5 hours after admission.

After 30 minutes of pushing, she complained of a sore throat and her face looked flushed. She was advised regarding pushing technique as she appeared to push 'into her throat'.

Her face & eyes were swollen after 1 hour and 10 minutes

although there was no problem with breathing. After second stage of labour lasting just short of two hours, she had spontaneous vaginal delivery of 3.342 kg baby.

After delivery the facial and neck swelling increased to a significant extent that it was quite painful and she could hardly open her eyes. She also complained of difficulty in breathing along with blocked nose and throat.

She was transferred to High Dependency Unit in the labour ward. Examination showed severe facial and neck oedema with crepitus.

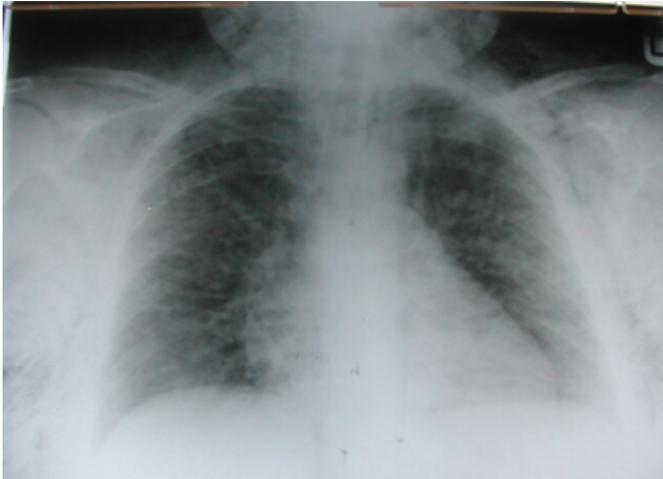
Cardio-respiratory status was stable and clear chest with bilaterally equal air entry.

Chest x-ray revealed gross and extensive surgical emphysema across the chest and up into the neck and pneumomediastinum with no evidence of pneumothorax (Fig.1)

She was managed conservatively with physiotherapy, analgesics and salbutamol nebulizer. She recovered well in 2-3 days time.

**Figure 1**

Figure 1: Chest x-ray showing extensive subcutaneous emphysema and pneumomediastinum



**CONCLUSION**

Subcutaneous emphysema with pneumomediastinum is also known as Hamman's Syndrome. It occurs mostly during the second stage of labour, related to the valsalva manoeuvre during the expulsive phase of labour where 'pushing down' acutely raises intra-alveolar pressure.

Pneumomediastinum is thought to occur when a marginally situated alveolus ruptures into the pulmonary interstitial space, with tracking of air toward the hilum and mediastinum .<sub>1</sub>

The diagnosis of subcutaneous emphysema is self-evident. The crepitus palpable on the face & the neck is virtually pathognomonic of this condition.

The definitive diagnosis is made on the chest x-ray mainly lateral view as they improve the visibility of air in the anterior mediastinum. <sub>2</sub>

The majority of patients require conservative management alone. Use of Entonox analgesia is probably contraindicated because it is likely to cause further expansion of the pneumomediastinum.<sub>3</sub>

Identification of subcutaneous emphysema is important because potential complications can be serious like pneumothorax & cardiac compression.<sub>4</sub>

To avoid such complications, shortening the second stage of labour by the use of forceps or vacuum extraction is recommended when pneumomediastinum has been diagnosed.

To conclude, surgical emphysema with pneumomediastinum is a rare complication of labour. This is generally a self-limiting condition. Early recognition followed by appropriate measures to prevent further complications is the key factor to reduce the morbidity & mortality associated with this condition.

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