SPONTANEOUS PNEUMOMEDIASTINUM

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INTRODUCTION

Spontaneous pneumomediastinum is the presence of free air within the mediastinum, and is not associated with trauma.

The incidence within the paediatric population can be as rare as 1 in 42,000 cases.

This is a case of spontaneous pneumomediastinum occurring in a child with no history of trauma or respiratory tract disease.

This case will hopefully increase awareness and highlight the use of conservative management.

CASE PRESENTATION

A 12 year old boy had been unwell for over a week with coryzal symptoms and coughing.

Over the subsequent 24 hours he felt some neck swelling, chest pain and difficulty in breathing. He was otherwise fit and well with no significant medical or family history.

He was talking with a normal voice, and had a patent airway. Initial observations were within a normal range, and he was alert and afebrile.

Blood gas analysis showed an initial respiratory acidosis (pH 7.29, pCO₂ 6.55) which gradually improved with administration of oxygen. His lactate levels however were increasing from 5 to 7.9.

On examination, he had evidence of intercostal and substernal recession and a respiratory rate of 45. There was diffuse wheeze on auscultation and extensive surgical emphysema and crepitus on palpation, affecting the neck, chest and arms.

Plain chest radiograph showed significant widespread surgical emphysema and pneumomediastinum, suggesting the possibility of tracheal rupture. There was no mediastinal shift (fig 1).

Fig. 1 Chest radiograph showing widespread emphysema

Fig. 2 CT coronal image of chest demonstrating extent of surgical emphysema

LEARNING POINTS

- Spontaneous pneumomediastinum in children is rare.
- A key point in the history is no evidence of preceding trauma.
- It can present with surgical emphysema, neck pain, dyspnoea and/or chest pain.
- Lateral and anteroposterior radiographs of the neck and chest must be obtained.
- CT scanning can identify tracheal injury in 70% of cases.
- A stable child with spontaneous pneumomediastinum can be managed conservatively with simple observation.

MANAGEMENT

This patient was promptly transferred to our Children’s Hospital and was reviewed by our Paediatric Emergency, Ear, Nose and Throat (ENT), Anaesthetic and Respiratory teams.

A CT scan was performed (fig 2) to ensure that there was no underlying oesophageal perforation or tracheal/bronchial tear that may require surgical intervention. No cause was demonstrated.

The patient was admitted to the Paediatric Intensive Care Unit (PICU) for observation, where he continued to remain stable and repeat chest radiograph 24 hours later showed no further deterioration.

It took 4 days for the emphysema to completely resolve, and review in the outpatient clinic 2 weeks later by our ENT team found the patient to have fully recovered.

Upon reflection, it was felt likely that this patient had a spontaneous tracheal defect that had resolved, but was the underlying cause for his surgical emphysema.