

Unusual Extension of Subcutaneous Emphysema in a Young Boy with Respiratory Distress

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Received: May 23, 2019; **Published:** July 22, 2019

Abstract

Ours was a case of 1 year 7 months old boy, admitted with fever and respiratory distress. Subsequently, the child developed swelling of face and neck, which gradually spread upto sole. After clinical examination and skiagram it was diagnosed to be a case of subcutaneous emphysema with right sided pneumothorax. Subcutaneous emphysema had an unusual extension up to sole which has rarely been reported in the literature.

Keywords: *Pneumothorax; Subcutaneous; Emphysema*

Introduction

Subcutaneous emphysema means air trapping in the subcutaneous tissue. Face, neck or trunk may be involved [1]. It is the result of breach in the airway at some point from pharynx to terminal bronchioles [2]. The most common causes are pneumomediastinum, pneumothorax, asthma, thoracocentesis and penetrating injury to the larynx or trachea [2]. Subcutaneous emphysema was first reported in a child with asthma in the year 1850 [3]. So far subcutaneous emphysema has been reported till knee [3]. We report the index case where subcutaneous emphysema extended up to sole in a child who was suffering from spontaneous pneumothorax.

Case Report

A boy aged 1 year 7 months was referred to our hospital with history of acute onset of respiratory distress and fever. Seven days before admission the child had cough and cold, coryza with wheezing. On admission he was restless and frightened. Clinical examination showed diffuse swelling of the face, neck and clavicular region with diminished breath sound in right side of the chest. Within a span of few hours the swelling gradually spread to involve the entire body upto sole. Crackling sensation elicited on palpation of this swelling pointed towards subcutaneous emphysema. Initial investigations showed haemoglobin of 10.8 gm/dl, total leukocytic count 13,500/cumm with 75% neutrophil, 23% lymphocytes and C-Reactive Protein of 18 mg/L. Electrolytes and renal profile were within normal limits. Later on, chest skiagram confirmed right sided pneumothorax and revealed subcutaneous emphysema. But the significant finding which was detected by whole body X-ray was air beneath the metatarsal and phalanges of both the feet (Figure 1). This demonstrated unusual extension of subcutaneous emphysema.



Figure 1: Skiagram showing presence of air upto sole.

Treatment consisted of thoracostomy tube drainage, oxygen, intravenous fluid and a course of intravenous antibiotics. During next four to five days the swelling gradually resolved spontaneously and patient recovered.

Discussion

Subcutaneous emphysema is a rare complication of acute severe asthma. There are also several reports of subcutaneous emphysema following spontaneous pneumothorax and pneumomediastinum [4]. Release of air from alveolar spaces causes ventilation perfusion mismatch and subsequent decrease in arterial oxygenation. Most of the cases resolve spontaneously. Some of them may require surgical intervention due to severe distress [5]. Extension of subcutaneous emphysema can be different depending upon the anatomical location and severity. But, demonstration of such an unusual extension of subcutaneous emphysema was first of its kind. In this case, the trapped air has dispersed through the fascial plane of subcutaneous tissue and reached the sole.

Sources of Support

None.

Declaration on Competing Interests

None.

Funding

None.

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Volume 8 Issue 8 August 2019

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