Research Article

Spontaneous Subcutaneous Emphysema: A Case Report

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ABSTRACT

Spontaneous subcutaneous emphysema is a rare clinical entity. It occurs after seemingly innocuous events like cough. Usually, there is only local swelling with some compression effects. However, sometimes, it is associated with pneumothorax or pneumomediastinum. Usually, it resolves slowly on its own. We here report a rare case of spontaneous subcutaneous emphysema in an adult female after a short period of cough. The relevant clinical discussion is also done.

Keywords: Subcutaneous emphysema, spontaneous, pneumomediastinum, asthma.

INTRODUCTION

Subcutaneous emphysema is the presence of air under the skin[1]. It can occur secondarily after trauma, medical procedures like central venous line insertion or infections like gangrene[1]. It causes local or diffuse swelling and can compromise body functions like phonation or deglutition. Spontaneous subcutaneous emphysema that is,emphysema without any underlying airspace or esophageal pathology, can occurrarely in some situations[2]. This may present with sudden onset respiratory distress or facial edema.

We here present a rare case of spontaneous subcutaneous emphysema after mild cough in an adult patient. As far as we searched, this is probably the first report of this rare complication from Eastern India.

The case report

A thirty seven year old female presented with cough for two days and sudden onset swelling of face for one day. She also complained of difficulty in opening her eyes and dysphagia. However, her dyspnea was mild and there was no local pain. The cough was non-productive and it was not associated with syncope or vomiting. She had no history suggestive of sudden increase in intrathoracic pressure like heavy straining or blowing in the recent past. There was no fever. She had no history of respiratory system disease.

On examination, the patient showed facial swelling (fig. 1) with fullness of the supraclavicular fossa on both sides. The swelling was diffuse and non-tender. On palpation, crepitus was felt over the swelling. Breath sounds were normally present bilaterally and there was no deformity of the chest wall. There was no sinus tenderness. Neck movement was restricted in all directions. The floor of the mouth was slightly elevated and tongue movement was also restricted. She could speak only with difficulty.

Routine blood tests were all normal. X ray study of the head and neck region showed (fig. 2) air in subcutaneous tissue of face with extension to neck region. Chest x ray was however normal. There was no evidence of esophageal rupture or rib fracture.

The case was finally diagnosed as spontaneous subcutaneous emphysema with no secondary cause. The patient was managed conservatively with only mild analgesics. By one week, her swelling and symptoms were relieved.

DISCUSSION

Spontaneous subcutaneous emphysema (SSE) is a rare entity and often missed, unless the clinical suspicion is high. It is a differential diagnosis of acute facial and/or cervical edema and differentiation can be done by proper clinical examination only in most cases.

SSE is diagnosed when all secondary causes like trauma or nasal sinus fracture has been excluded. The condition is benign in itself, but we need to rule out potential underlying comorbidities like pneumomediastinum or pneumothorax[3]. This is sometimes found in critical care setting. Although conservative management is enough in most cases, sometimes surgical procedures like infraclavicular incisions are used, especially when the swelling is massive or rapidly developing[4]. Our patient, however, did not need any surgical intervention.

SSE around neck has the potential to obstruct the airways and cause respiratory failure, although this rarely occurs. Sometimes, SSE, along with more severe conditions like pneumothorax can occur in asthmatics and in

these cases, rapid intubation may be required[5]. Another clinical situation in which SSE may occur is post labour[6]. These patients may present a few hours after delivery and usually recover without interventions.

Usually, SSE is without any sequelae. But those cases of SSE which hare associated with pneumomediastinum, may develop asthma in follow up. Thus, even if the patients recover quickly, proper counselling should be done[7]. SSE can also occur as a very rare complication of lung cancer[8]. Thus, specially in older patients, we should do a thorough work up to ascertain that the SSE is really benign. Another caveat is the location of the subcutaneous air around orbits. Orbital SSE can be sight threatening and thus, aspiration is warranted[9]. Our patient developed SSE presumably after bouts of cough. Even as innocuous an activity as blowing of nose has been reported to cause SSE[9].

The exact pathogenesis of SSE is not known. However, most cases are thought to arise from over distended lung alveoli[10]. The air tracks up the bronchovascular bundles, through mediastinum and fascial planes of upper chest and finally to subcutaneum.

The purpose of presenting this case is to sensitize the clinicians to this rare clinical condition. This is usually a self-limiting condition, but we need to be vigilant for potential complications.

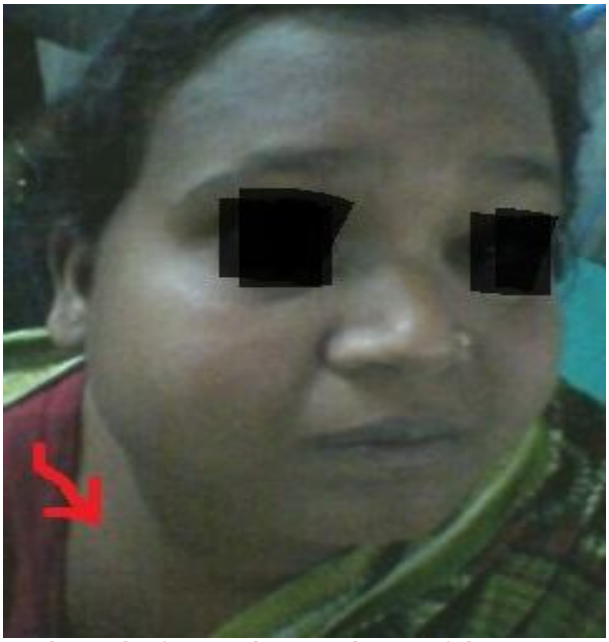

Fig. 1: the face and upper thorax of the patient showing swelling with obliteration of fossa and folds (Red Arrows)

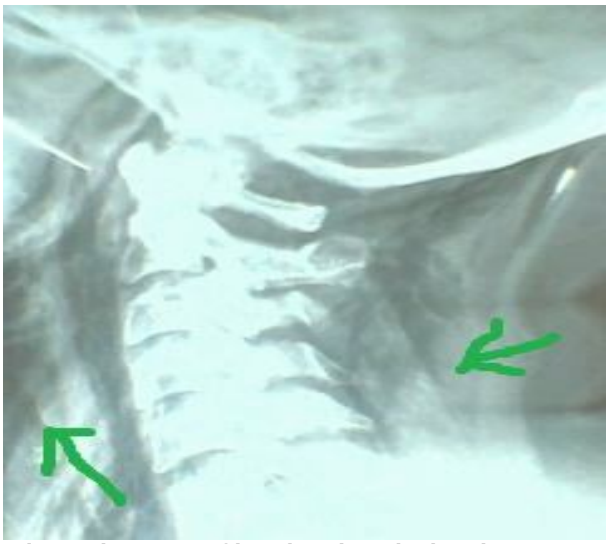

Fig. 2: the X ray of head and neck showing air in subcutaneous tissues (Green Arrows)

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