

Spontaneous Pneumomediastinum: Emergency Care Experience in Northern Tanzania

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Abstract

Background: Spontaneous pneumomediastinum is defined as the presence of interstitial air in the mediastinum without any apparent precipitating factor; it is unusual occurrence with only few cases reported and unique way of approaching in management.

Case Presentation: We are reporting a case of 22 years old male with Spontaneous pneumomediastinum, who was treated conservatively, with hospital stay of 72 hours.

Conclusion: Patient was managed conservatively however some of investigations and interventions were needed to exclude oesophageal perforation and pneumomediastinum.

Keywords: Arusha Lutheran Medical Centre (ALMC); Asthma; Spontaneous Pneumomediastinum; Subcutaneous emphysema

Abbreviations

ED: Emergency Department; EDE: Emergency Department ECHO; ICU: Intensive Care Unit; SPM: Spontaneous Pneumomediastinum

Introduction

Spontaneous Pneumomediastinum (SPM) is unusual occurrence with few cases reported, it usually occurs in young male without any precipitating factors or diseases [1-3].

It is described as free air or gas located within the mediastinum that is not associated with any noticeable cause such as chest trauma. SPM has been associated with many conditions and triggers, including bronchial asthma, diabetic ketoacidosis, forceful straining during exercise, inhalation of drugs, as well as other activities associated with the Valsalva maneuver [4].

Case Presentation

Patient information

22 years old male attended at our centre as a referral from other hospital. He came with history of chest and neck pain, mild difficulty in breathing and face, neck and chest swelling. There is no history of trauma, but he had history of acute asthma attack few hours before coming at our centre.

Clinical findings

All the vital signs were stable; B.P = 125/70 mmHg, P.R = 77 b/min, R.R = 19 c/min, SPO2 = 94% on room air, T = 36.5°C. On detailed examination, there were subcutaneous crepitations at face, neck and chest. Thoracic emergency department ECHO (EDE) shows no lung sliding bilaterally (pneumothorax).

Diagnostic assessment

Chest X ray result showed only subcutaneous emphysema (Figure 1), Contrast Thoracic Computed Tomography (CT) Scan revealed Mediastinal free air collection evidenced with continuous diaphragm sign, with no evidence of intra-thoracic or intra-abdominal leakage seen (Figure 2).



Figure 1: Chest X ray shows subcutaneous emphysema.



Figure 2: Contrast thoracic computed tomography (CT) Scan reveal mediastinal free air collection evidenced with continuous diaphragm sign.

Therapeutic intervention

Patient was given intravenous metronidazole 500 mg stat and intravenous Ceftriaxone 1g stat to prevent mediastinitis, and was kept in ICU for close monitoring and NIL per oral. Oesophagoscopy report revealed normal findings and feeding was initiated under observation for 48 hours. SPM subsided and he was discharged home.

Discussion

SPM occurs predominantly in young males [4] and it is uncommon condition. Its incidence is 1 in 30,000 ED referrals [10].

The pathophysiology of SPM was first described in 1944 by Macklin and Macklin, who suggested the presence of an alveolar-interstitial pressure gradient [4-7]. Increased airway pressure leads to alveolar rupture and, consequently, dissection of air along the bronchovascular sheath toward the mediastinum, which can extend to the cervical subcutaneous tissue, pleura, pericardium, peritoneal cavity, and epidural space [7,8].

The present study confirms that SPM can develop without a triggering event and with no conclusive findings on a chest X-ray [8]. Thoracic CT Scan can be helpful in diagnosis. Likewise, oesophagography can be performed when oesophageal rupture is suspected. Mostly SPM disappear themselves by bed rest [9], and only close monitoring of patient is needed.

Conclusion

SPM can be usually managed conservatively; however appropriate investigations are needed to exclude oesophageal perforation and pneumomediastinum.

Ethics Approval and Consent to Participate

Case Presentation was reviewed and approved by Institutional Review Board, Arusha Lutheran Medical Centre.

Consent for Publication

Consent obtained from patient for publication.

Conflict of Interest

The authors declare no conflict of interest.

Authors' Contributions

Emmanuel Mduma MBBS, He was the one who manage and lead the team in managing this patient at Emergency department and writing this case presentation.

Emmanuel Lema, MD, MMED – Surgery, He was the one who managed patient together with intensive care unit (ICU) team at ICU and helping in giving report as well as editing the case presentation.

Peter Mabula, MD, MMED- Emergency Medicine, He was the one who supervising the management of patient at emergency medicine department with helping in editing this case.

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