Spontaneous pneumomediastinum and pneumopericardium in a young woman: a case report

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Introduction: Spontaneous pneumomediastinum (SPM) is an uncommon entity mainly affecting young adult males with a tall, thin body habitus which can be rarely complicated with spontaneus pneumopericardium (SPP)^{1,2}.

Case report: 22-year-old female patient was examined in the Emergency Department (ED) due to an acute onset of dyspnoea and severe pain in the left side of the neck, chest and left arm, notably when leaning forward. She denied trauma, physical exertion, coughing, aspiration of foreign body, drug abuse or emesis. On admission, she was afebrile and physical examination revealed symmetric, clear breath sounds and inaudible heart beats without murmur or Hamman's sign. An arterial blood gas analysis revealed mild hypocapnia: pH 7.443, PaO₂ 13.09 kPa, PaCO₂ 4.34 kPa, and SaO₂ 97%. The complete blood analysis was within normal range apart from lactate dehydrogenase (LDH= 333 U/L). The 12-lead ECG showed sinus tachycardia with normal axis, intervals within the normal range and no sign of low voltage (**Figure 1**). A chest X-ray showed pneumomediastinum and pneumopericardium (**Figure 2**), and subsequent chest multi-slice computed tomography confirmed extensive pneumome

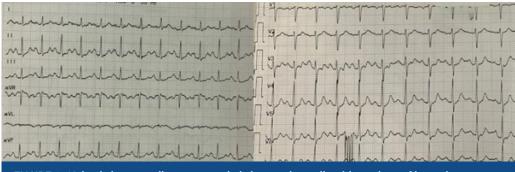


FIGURE 1. 12-lead electrocardiogram recorded sinus tachycardia with no signs of low voltage.

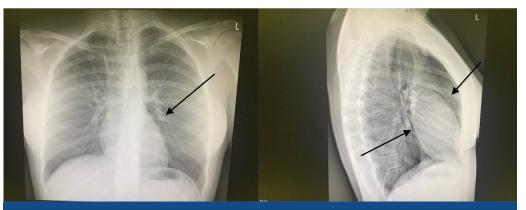


FIGURE 2. The chest X-ray finding indicating suspected pneumomediastinum and pneumopericardium.

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diastinum with pneumopericardium up to 5 mm in thickness, no signs of pulmonary bullae, or any structural abnormalities in the bronchi or the oesophagus. Echocardiography was done using subxiphoid projection showing no pathology and no hemodynamic repercussions due to pneumopericardium. She was hospitalized and the therapy was absolute bed rest, peroral analgesia and nasal oxygen supply (4 L/min). During hospitalization she was hemodynamically stable and afebrile, therefore no antibiotics were prescribed. The follow-up chest X-ray done 7 days after, showed a complete resolution of SPM and SPP. Thus, she was discharged with a recommendation to avoid physical activity for the next 2 months. At 2-month follow-up visit she was symptom free, with no signs of SMP or SPP (**Figure 3**).



FIGURE 3. The follow-up chest X-ray after 2 months showed no signs of pneumomediastinum or pneumopericardium.

Conclusion: SPM and SPP are benign diseases with low incidences in a young, otherwise healthy adults. When evaluating a young adult in the ED, who presents with chest pain and dyspnoea, it is important to include SPM and SPP in the differential diagnosis if there is reasonable clinical doubt, in order to establish an early diagnosis and avoid potential complications.

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