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Spontaneous pneumomediastinum: Beyond the risky diving

To the Editor:

We read with great interest the letter from Cascais-Costa et al.[1] on the risk of developing pneumomediastinum as a result of diving. The authors reviewed the medical condition along with its primary risk factors. Hyperventilation due to psychological stress is one cause that is scarcely referenced in the medical literature. We introduce a case of a patient with a leptosomal phenotype body who presents a spontaneous pneumomediastinum resulting from an anxiety crisis.

Spontaneuos pneumomediastinum (SP) is an uncommon condition where air gets trapped in the mediastinum without trauma associated. The most common factors are emesis, cough or Valsava maneuvers. Other trigger situations are asthma exacerbation, barotrauma, use of illicit drugs or tracheobronchial/esophageal rupture.[2] Psychological stress with consequent altered breathing pattern are reported as a cause of SP.[3] Psychiatric diseases such anorexia nervosa or anxiety attacks, have also been shown to cause SP. This could be related to the intentional vomiting or the previously mentioned alterations in the ventilatory pattern. This generates an increase in intrathoracic pressure causing alveolar rupture, which then releases air from the peribronchial spaces to the mediastinum.[4] Similar to pneumothorax cases, those who have a leptosomic clinical phenotype with tall and thin body and are also young and predominantly male are considered to have several of the predisposing risk factors that are associated with the appearance of SP. This is due to the structure of the thoracic tissues.[5] In some cases, pneumothorax or pneumoperitoneum may appear as a pneumomediastinum complication. Usually, if no surgical interventions are needed, treatment consists of relieving symptoms and conservative management with radiological follow up.

A 34 years-old male patient, nonsmoker with other toxic habits, medical history or respiratory pathologies, was admitted to emergency room with 12 h-history of pharyngeal, cervical and thoracic oppressive pain that got worse with body movements. No fever, coughing attacks, vomiting, great efforts, Valsalva maneuvers or other findings were present. Upon admission his BMI was 19 kg/m^2. Patient expressed feeling increased levels of psychological stress resulting from job issues that arouse due to the pandemic. Patient displayed cyclic episodes of short breathing and hyperventilation patterns. His blood pressure was 145/75 mmHg, respiratory rate was 24 beats/min and oxygen saturation of 96% at room air. On examination, palpable crepitus at the neck area and upper torso were detected. There were no relevant findings on laboratories studies. Thorax radiography revealed air presence in the left paratracheal structures with no indication of a pneumothorax. Subsequent CT cervical scan showed air located in vascular, prevertebral and perivisceral spaces (figure A black arrows), which extended from the skull base to the thorax. CT thorax scan revealed air in prevascular space, supra-aortic trunks, trachea, great vessels and peribronchovascular area (Macklin effect – figure B black arrow-) to the latero-cervical region. Subcutaneous emphysema was in the supraclavicular spaces. These findings are consistent with spontaneous pneumomediastinum affecting the cervical region. Tracheobronchial and esophageal rupture were ruled out by a bronchoscopy and barium esophagography. Subsequent to the thoracic surgical evaluation, no surgical intervention was needed. After 48 h with an improved follow up, patient was discharged with good outcomes.

In conclusion, this case demonstrates that a patient with leptosomic body phenotype who is experiencing increased levels of stress could be at risk of developing a spontaneous pneumomediastinum.

Conflicts of interest

The authors have no conflicts of interest to declare.

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Wearing masks and the fight against the novel coronavirus (COVID-19)

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We read with great interest the article by Ippolito et al.[1] in which the authors summarized the use of medical masks in the viral outbreaks like the COVID-19. They pointed out that wearing medical masks and respirators are critical in the personal protection for the healthcare workers, especially in virus breakouts such as COVID-19. They also expressed their concerns about the worldwide mask supplies running out. As their study compared different features of medical masks and respirators, the essential role of wearing masks for both inward and outward protection (protecting the wearer from the environment and the opposite) was emphasized. Apart from the inward and outward protection that wearing the mask provides, the indirect effect of wearing masks during epidemics can also be of great importance.

As COVID-19 is present in saliva,[2] wearing the medical mask stops the transmission of this disease in droplets and aerosols. As patients may be asymptomatic and the reactivation of this disease is possible,[3,4] wearing masks by asymptomatic individuals is strongly recommended. In addition to the direct mechanisms of preventing the spread of the virus, which is the main function of medical masks in viral infections, the other way that wearing the medical masks helps the healthcare systems to combat such epidemics is by decreasing the workload of the healthcare systems and facilitating detection of the new cases.

In COVID-19 outbreak, the symptoms of the disease are cough, fever, fatigue, diarrhea, headache, sputum production, haemoptysis, dyspnoea and lymphopenia.[5] These symptoms are common among other types of influenza and bacterial common cold. Wearing masks will also prevent those types of infections caused by other types of pathogens which are communicable with aerosols and droplets. If all the individuals in a community wear masks, the number of cases referred to the hospitals presenting COVID-19 like symptoms decreases. In other words, the work load of the medical system decreases. So, the real cases of COVID-19 can be screened out of all other types of influenza and common cold comparatively easily. By referring fewer people to the clinics and hospitals, the chance of the contamination of new patients while visiting the hospitals and clinics also deceases. This strategy might help countries to fight against the outbreak of COVID-19.

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