Dysphonia and chest pain as presenting symptoms of pneumomediastinum

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ÖZET
Disfoni ve göğüs ağrısı semptomları ile kendini gösteren pnönomediastinum olgusu


Anahtar Kelimeler: Pnönomediastinum, disfoni, esrar.

SUMMARY
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Spontaneous pneumomediastinum (SPM) is an uncommon condition characterized by the presence of free air in the mediastinal space that is unrelated to trauma or medical procedure. We describe a case of a 25-years-old woman who presented to the emergency room with a chief complaint of dysphonia, and chest pain. An X-ray of the neck and computed tomography of the chest were performed and showed findings consistent with a pneumomediastinum. Supportive treatment led to an uneventful recovery. We discuss the differential diagnosis of the co-existing chest pain and dysphonia in the diagnosis of SPM.

**Key Words:** Pneumomediastinum, dysphonia, marijuana.

Spontaneous pneumomediastinum (SPM) is an uncommon condition characterized by the presence of free air in the mediastinal space not caused by trauma or medical procedure. SPM occurs secondary to the rupture of alveoli and tracking of free air along peribronchial vascular sheaths towards the lung hilum and into the mediastinum.

The most common presenting symptoms are chest pain, cough, and dyspnea (1). Subcutaneous emphysema, and crepitations occurring with the heartbeat, the Hamman’s sign, are more specific, but less common physical finding in a patient with SPM (2). We present a case of SPM causing dysphonia and chest pain secondary to prolonged Valsalva maneuvers during marijuana inhalation.

**CASE REPORT**

A previously healthy 25-years-old woman presented to the emergency room with a chief complaint of dysphonia and chest pain. She first noticed mild chest discomfort before falling asleep the night prior to presentation. The following morning she awoke with an intense pain in her upper chest and neck as well as a change in the pitch of her voice. She stated that her “voice sounded like someone else’s”; taking a deep breath was painful but she denied any shortness of breath.

Upon questioning the patient admitted to marijuana use the night the pain began. It involved the inhalation of smoke and forceful holding of it in her lungs, with the pain developing soon thereafter. She admitted to recreational marijuana use in the past but denied using any other illicit drugs including cocaine. The patient denied any trauma to the chest or neck or any recent medical procedures.

A physical examination revealed a labile, young woman in mild distress, which appeared to be secondary to pain. The patient withdrew to attempts to palpate any area involving the neck or upper chest. Light palpation of the area from the anterior sub-mentibular region and moving inferiorly to the superior aspect of the xiphoid process elicited a pronounced pain reaction. The patient was not tachypneic and had good air movement in all lung fields. The cardiac exam revealed a regular rate and rhythm with no murmur, rub or gallop. Abdominal exam was benign. Extremities were warm with strong distal pulses.

An X-ray of the neck and computed tomography of the chest were performed and showed an area of lucency posterior and lateral to the trachea extending superiorly into the neck with an anterior displacement of the larynx, consistent with pneumomediastinum (Figure 1,2).

A urine drug screen came back positive for tetrahydrocannabinol. The patient was treated with ketorolac, which successfully tempered the pain. After overnight monitoring in the intensive care
DISCUSSION

SPM is a rare, usually benign clinical condition characterized by the presence of free air in the mediastinal space that is unrelated to trauma or medical instrumentation. Straining against a closed glottis is one of the causes of alveolar rupture and the likely mechanism by which our patient developed a pneumomediastinum (3). This type of strain can be re-produced in activities requiring coughing, defecating, lifting of a heavy load, throwing a ball, or heavy vomiting (4,5). Inhalation drug use, with an individual performing a prolonged Valsalva maneuver to increase drug absorption by maximizing exposure time is a documented risk factor for pneumomediastinum (3).

The most common clinical findings of pneumomediastinum in a case series of 62 adults with SPM are chest pain (63%), cough (45%), and dyspnea (44%) (1). Neck pain and lightheadedness both occurred 18% of the time in these studies. The change in pitch of the voice is much less reported and discussed in the literature (6). It is secondary to the displacement (usually anterior) of the larynx by the air present between fascial planes, which results in shortening of the vocal cords. When accompanied by chest pain, the differential diagnosis of dysphonia is short and includes spontaneous and post-traumatic pneumomediastinum, retropharyngeal hematoma, thyroid malignancy, gastroesophageal reflux, surgical chest trauma, aortic aneurysm, and lung cancer (Table 1).

Treatment of SPM is supportive. Basic radiographic analysis, pain control, supplemental oxygen and admission to the hospital for observation for respiratory compromise are typically recommended. In an absence of any primary cause of a pneumomediastinum such as infection, instrumentation, esophageal rupture or trauma, the prognosis for recovery is excellent and the recurrence unlikely (4).

REFERENCES