

Asymptomatic Spontaneous Pneumopericardium in a Young Post-COVID-19 Patient: A Case Report

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Asymptomatic Spontaneous Pneumopericardium in a Young Post-COVID-19 Patient: A Case Report

Gomez Casanovas J, Baird A, Sanchez E, Fleires A, Hernandez D

Background

Pneumopericardium is a rare clinical condition which is defined as the presence of air or gas in the pericardial cavity. Although uncommon to see, it can present after chest trauma, barotrauma, fistula between the pericardium and surrounding structures, gas-producing microorganisms and iatrogenic causes. But spontaneous presentations are even more uncommon. Coronavirus Disease 2019 (COVID-19) infection became a large global epidemic and in addition to respiratory symptoms, involvement of other organs such as pericardium was also reported. We here present a young patient post-COVID-19 infection with isolated spontaneous pneumopericardium.

Case Presentation

A 19-year-old patient with a past medical history of ADD and general anxiety disorder presented to the emergency department with worsening abdominal pain of 4-day duration, that started after having lunch at a family gathering. The pain progressed to colicky pain with no radiation and was associated with dysuria. Of note, 2 weeks prior the patient had a COVID-19 infection associated with a non-productive cough, for which she received supportive treatment. She denied any shortness of breath, chest pain, paresthesia's or paresis, recent trauma, any cannulations, and recent diving. No history of illicit drug use. Vitals were unremarkable. Physical examination showed suprapubic tenderness. Urinalysis included presence of moderate leukocyte esterase, WBC 10-25 and 5-10 RBC. The Urine pregnancy test was negative. Due to the abdominal pain and concern for appendicitis, CT (Computed Tomography) scan of the abdomen and pelvis with contrast was ordered and did not reveal any acute intra-abdominal or pelvic process, but there was an incidental finding of air presence in the pericardial space. An immediate CT of the chest without contrast was ordered and it did not reveal any pneumopericardium or pneumomediastinum. Pelvic US was performed later to evaluate for potential causes; and was unremarkable. Patient was admitted under observation for management of UTI (Urinary Tract Infection). She remained stable without any shortness of breath or chest pain and her abdominal pain improved in the first 24 hours. She was later discharged with oral antibiotics for UTI.

Conclusion

Pneumopericardium is a rare but potentially life-threatening condition. The most common clinical presentation is with chest pain, dyspnea and/or hemodynamic instability if large enough to produce tamponade physiology. In this case, the patient had a recent COVID-19 infection with cough. COVID-19 infection is associated with alveolar rupture and hyperinflammatory response, which could increase the risk of pneumopericardium, but the exact mechanism has not been elucidated. Since most of the patients with COVID-19 have a mild clinical presentation, the incidence of pneumopericardium is difficult to evaluate and the symptoms easily be obscured by the constellation of symptoms these patients present. In this patient, the repeat CT of the chest was unable to find the presence of air, which was consistent with improvement of the patient 's abdominal pain. This could have been because of migration of air or reabsorption, which correlates to the self-limiting nature of this disease.