Case Report

48 year old male with PMHx of Seizures presents to the ED with a 4 day history of shortness of breath. Patient states he was working on installing a new sink at home 4 days ago, when the sink fell onto his right chest and arm filled with water. He held his chest for approximately 20 minutes while his wife dumped the water. Patient recently saw his PMD due to concerning pattern on CXR. He was admitted to MICU on multiple vasopressors, broad-spectrum antibiotics, and sedatives with the diagnosis of Septic Shock secondary to Septic Pulmonary Emboli.

Inpatient Hospital Course

Patient's stay in the hospital was a persistent decline from the day of admission to the day of his death. Patient’s length of stay was 20 days, all spent in the MICU. Patient was found to have valvular vegetations on the tricuspid valve by a transesophageal echocardiogram performed on hospital day 2. On hospital day 3 a repeat CT Chest was performed which revealed worsening bilateral septic pulmonary emboli with a right sided pneumothorax requiring thoracostomy. Patient then went on to have bilateral pulmonary emboli presumably secondary to his IVDA. Patient was admitted to MICU on multiple vasopressors, broad-spectrum antibiotics, and sedatives with the diagnosis of Septic Shock secondary to Septic Pulmonary Emboli.

Discussion

Septic pulmonary emboli are a rare, but well recognized disease process. It occurs with right-sided endocarditis or septic thromboembolism from dental, pelvic or tonsillar infections as well as infected central venous catheters. This uncommon pathological process generally presents with insidious onset of fever, respiratory symptoms and lung infiltrates. The diagnosis of septic pulmonary emboli is rarely made in the ED due to the nature of progression and the vague symptoms that accompany the disorder on initial presentation.

Septic pulmonary emboli is not a diagnosis exclusive to the adult population. Data has shown more cases in children due to pediatric physicians recognizing risk factors in the pediatric population. Risk factors in children include soft tissue infections, osteomyelitis, and intravenous catheters. An uncommon complication of pharyngitis in the United States has been linked to septic pulmonary emboli as an uncommon cause. Lemiere's syndrome has been described for decades in the literature, but has rarely been recognized. There is a male predominance and usually affects the young, healthy individual with a primary HEENT infection being either pharyngitis, sinusitis, or odontogenic infections. Septic pulmonary emboli is not a diagnosis exclusive to the adult population. Data has shown more cases in children due to pediatric physicians recognizing risk factors in the pediatric population. Risk factors in children include soft tissue infections, osteomyelitis, and intravenous catheters. An uncommon complication of pharyngitis in the United States has been linked to septic pulmonary emboli as an uncommon cause. Lemiere's syndrome has been described for decades in the literature, but has rarely been recognized. There is a male predominance and usually affects the young, healthy individual with a primary HEENT infection being either pharyngitis, sinusitis, or odontogenic infections. Septic emboli presumably secondary to his IVDA. Patient was admitted to MICU on multiple vasopressors, broad-spectrum antibiotics, and sedatives with the diagnosis of Septic Shock secondary to Septic Pulmonary Emboli.

According to Chest, all confirmed cases of septic pulmonary emboli had CXR abnormalities. All CXR were read as patchy infiltrates or nodules. Cavitary lesions were seen in 23% of CXR and bilateral or unilateral effusions were noted in 54% of the x-rays. Chest CT scans are good follow-ups in toxic appearing patients or those with patchy infiltrates and possible cavitary lesions. A 2006 study from the Journal of Roentgenology states the most common CT finding in septic emboli are multiple nodules in various stages of cavitation. Another clinical pearl that has been mentioned throughout the literature is to look for the "feeding vessel sign" on CT. A "feeding vessel" is a prominent central vessel within a nodule. These vessels have been traced to the left atrium CT and the latest studies request pulmonary veins being the "feeding vessels."

Septic pulmonary emboli are a rare and difficult diagnosis for the ED physician to make on admission due to the general symptoms of malaise. From symptom onset to diagnosis has a median time of 18 days, proving the difficulty of diagnosis for all clinicians. Eliciting a good history and discovering hidden risks for septic pulmonary emboli may mean the difference between a hospital admission or morgue decision.

References

7. No Conflicts of Interest.

Lungs: Tachypneic, shallow respirations, +Tachycardic, +S1, +S2, Regular rhythm, no murmurs, rubs, or gallops. +2/4 Radioles pulses bilaterally
Cardiac: +Tachycardic, +S1, +S2, Mild tenderness to palpation to right anterior chest wall, no crepits, symmetrical inspiratory/expiratory chest wall motion
Abdomen: Soft, supple, +tender to palpation, Bowel sounds normal. No rebound, no guarding, no HSM
Skin: No hyperpigmentation, no lesions or rashes
Extremities: FROM x 4, no edema
Neuro: AAOx3, cranial nerves II-XII grossly intact, no focal deficits, sensation intact.

Differential Diagnosis

Myocardical infarction, Aortic Disssection, Pulmonary Embolism, Acute Abdomen, Infective Endocarditis, Septic pulmonary emboli, Pneumonia, Pneumothorax, Pancreatitis, Acute cholecystitis, Peptic Ulcer Disease, Blunt Cardiac Injury, Pulmonary Contusion, Appendicitis, Influenza, Upper Respiratory Infection, Bronchitis, Viral illness

 SMA-7: Na: 124, K: 3.9, Cl: 90, Ca: 2.08, Gluc: 164, Cre: 10
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LFTs: Alb: 4.1, SGOT: 18, SGPT: 16, Bili Tot: 3.0, Alik Phos: 97

Cardiac: Troponin I 1.010, CPK 138, SNT: 70

ABG: pH 7.43, pCO2 46.0, pO2 95 on 02 98% on room air

Physical Exam

Vitals: T 101.0°F BP 134/108, HR 146, RR 24, PO2 98% on room air

General: Severe distress, clutching his chest. Tachypneic, diaphoresis

HEENT: NC/AT, EOMI, PERRL, Oral mucosa moist, intact, no cervical lymphadenopathy

Neck: Soft, supple, non-tender, no JVD, no cardio bruises/110348460/152545619