

# Persistent Left Superior Vena Cava: Incidental Discovery in Adult

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## Abstract

**A middle age Caucasian gentleman presented to the Emergency Department with fever, chills and hypotension. Chest X-ray revealed consolidation in right lower lobe consistent with pneumonia.**

**A chest radiograph after central line placement revealed a venous anomaly. CT scan with contrast revealed persistent left superior vena cava and absent right superior vena cava.**

**Key words:** Left superior vena cava, anomalous venous drainage

## Case Presentation

A 35 year-old Caucasian gentleman presented to the Emergency Department (ED) with a 2 day history of fever, chills, and cough with productive sputum. In the ED, the patient was found to be hypotensive with a systolic blood pressure of 75 mmHg and diastolic blood pressure of 40 mmHg. He was tachycardic with heart rate of 125/minute, and tachypneic with respiratory rate of 28/minute. A chest X-ray revealed dense consolidation of right lower lobe consistent with pneumonia. The patient's condition deteriorated requiring assisted mechanical ventilation. After aggressive volume resuscitation the patient was started on vasopressors. A central venous line was placed via right subclavian approach. A chest radiograph after the line placement revealed that the central venous line was going from right subclavian to the left side (**Figure 1**). A computed tomography (CT) scan of chest with intravenous contrast revealed

an absent right superior vena cava, and a persistent left superior vena cava draining in coronary sinus (**Figures 2 and 3**). The patient then underwent central venous line placement by left subclavian route going into left superior vena cava (**Figure 4**).

## Discussion

A persistent left superior vena cava is an uncommon abnormality of the superior vena cava system. It only affects 0.4% of the general population [1]. The combination of persistence of left superior vena cava in the absence of right superior vena cava is even more unusual accounting for 0.07% to 0.13% of the general population [2]. In most cases the anomalies are found as an incidental discovery during central venous line placement, permanent pace maker placement, during echocardiography or CT of chest with contrast.

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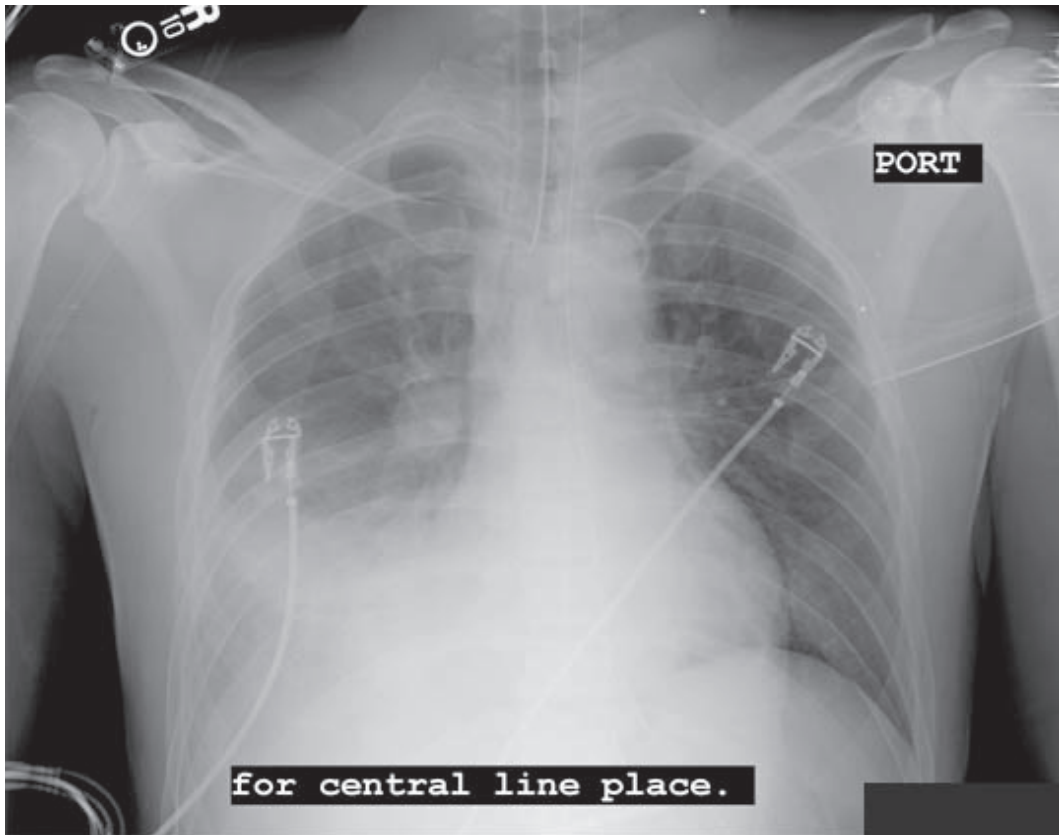
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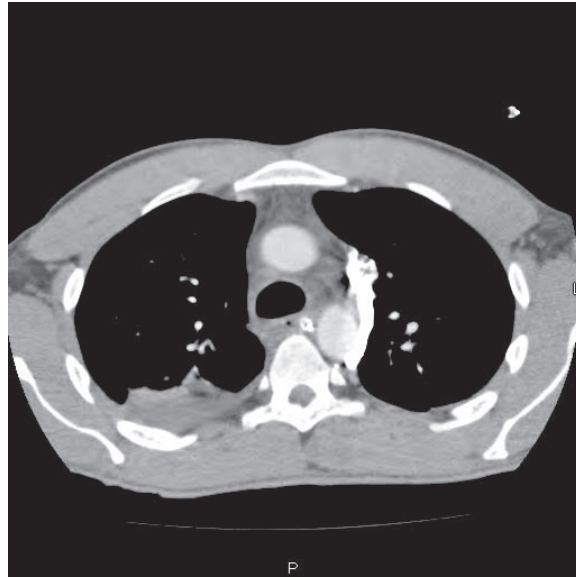
**Figure 1. RIGHT SUBCLAVIAN LINE GOING TOWARDS LEFT SUBCLAVIAN VEIN AND CURLING BACK**



**Figure 2. CONTRAST CHEST CT DEPICTING UNUSUAL LEFT SUPERIOR VENA CAVA**



**Figure 3.** CHEST CT DEMONSTRATES CONTRAST IN LEFT SUPERIOR VENA CAVA



**Figure 4.** LEFT SUBCLAVIAN CENTRAL LINE GOING IN LEFT SUPERIOR VENA CAVA, AND ALSO SHOWING RIGHT LOWER LOBE CONSOLIDATION

