

## CLINICAL IMAGE

# Extreme premature with persistent left superior vena cava

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## Abstract

Persistent left superior vena cava (PLSVC) is a congenital anomaly, that results when there is an absence of the normal regression of the left common precardial vein during embryogenesis. Usually, this anomaly remains asymptomatic, however, when the PLSVC drains into the left atrium this could lead to a right-to-left shunt. Additionally, this can result in inadvertent delivery of air or thrombus into the systemic circulation with potential neurologic, cardiac and renal complications. In this article, we present a case of an extreme premature Mexican newborn in which the diagnosis was made after placement of a percutaneous central venous catheter.

An extreme premature newborn admitted to the neonatal intensive care unit was the product of a normal pregnancy that was complicated with chorioamnionitis and thus culminated with a C-section. He was born at a gestational age of 24.5 weeks with a birth weight of 665 g. After admission, the patient remains with difficulty breathing and due to the need of parenteral nutrition a percutaneous central venous catheter was placed, the control x-ray show an abnormal catheter trajectory (Fig. 1a). Echocardiography shown the absence of the catheter within the right superior vena cava and confirm the rare diagnosis of persistent left superior vena cava (PLSVC) in a newborn, after revealed the catheter within the left superior vena cava and the coronary sinus (Fig. 1b), additionally, as expected due to the prematurity a patent ductus arteriosus and a patent foramen ovale were detected, no other structural

cardiac defects were found. In addition, we were able to remove the catheter 18 days after its placement without complications.

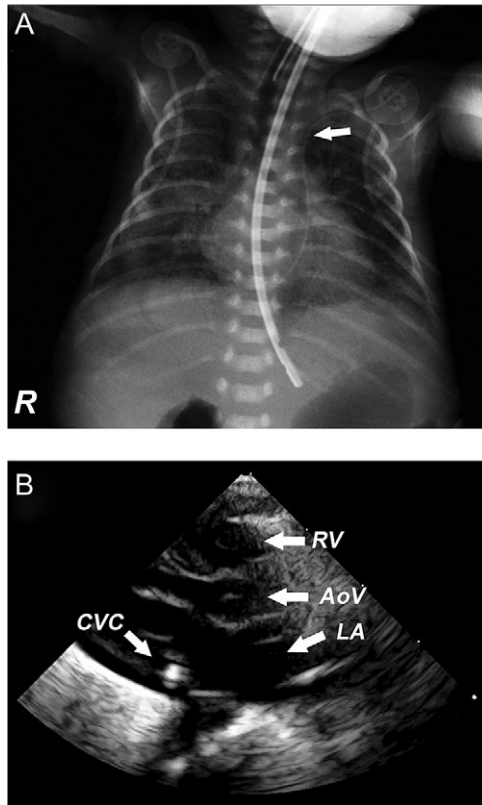
PLSVC is a congenital anomaly, with a prevalence of 0.1–0.3% of the general population, and 2.1–5% in patients with other congenital cardiac pathologies. This condition results when there is an absence of the normal regression of the left common precardial vein during embryogenesis. Thus, the PLSVC runs between the left atrial appendage and left pulmonary veins, and down the back of the left atrium, entering the right atrium through the orifice of an enlarged coronary sinus, though in ~10% of cases it drains in the left atrium [1].

Often diagnosis is made in adulthood as an incidental finding during venous catheter placement, this finding should be

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**Figure 1:** (A) chest x-ray showing central venous catheter that runs through the left mediastinum indicating a persistent left superior vena cava (arrow). (B) Transthoracic echocardiography in a parasternal longitudinal axis showing the central venous catheter (CVC) within an enlarge coronary sinus, additionally the left atrium (LA), aortic valve (AoV) and right ventricle (RV) are shown

confirmed by either echocardiography or angiography [2]. Additionally, differential diagnosis of left paramediastinal catheter should include extravascular positioning or misplaced catheter within the left internal thoracic. Usually this anomaly remains asymptomatic, however, when the PLSVC drains into the left atrium this could lead to a right-to-left shunt. This can result in inadvertent delivery of air or thrombus into the systemic circulation with potential neurologic, cardiac and renal complications [2, 3].

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## CONFLICT OF INTEREST STATEMENT

Authors declare no conflict of interest related to the publication of this article.

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## ETHICAL APPROVAL

All ethical requirements have been fulfilled for this publication.

## CONSENT

Written informed consent was obtained from the mother of the patient, for the publication of this article and any accompanying images. A copy of the written consent form is available for review by the Editor-in-Chief of this journal.

## GUARANTOR

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