

Persistent left superior vena cava (PLSVC) and the correct anatomical interpretation of a peripherally inserted central catheter tip position: a case report.

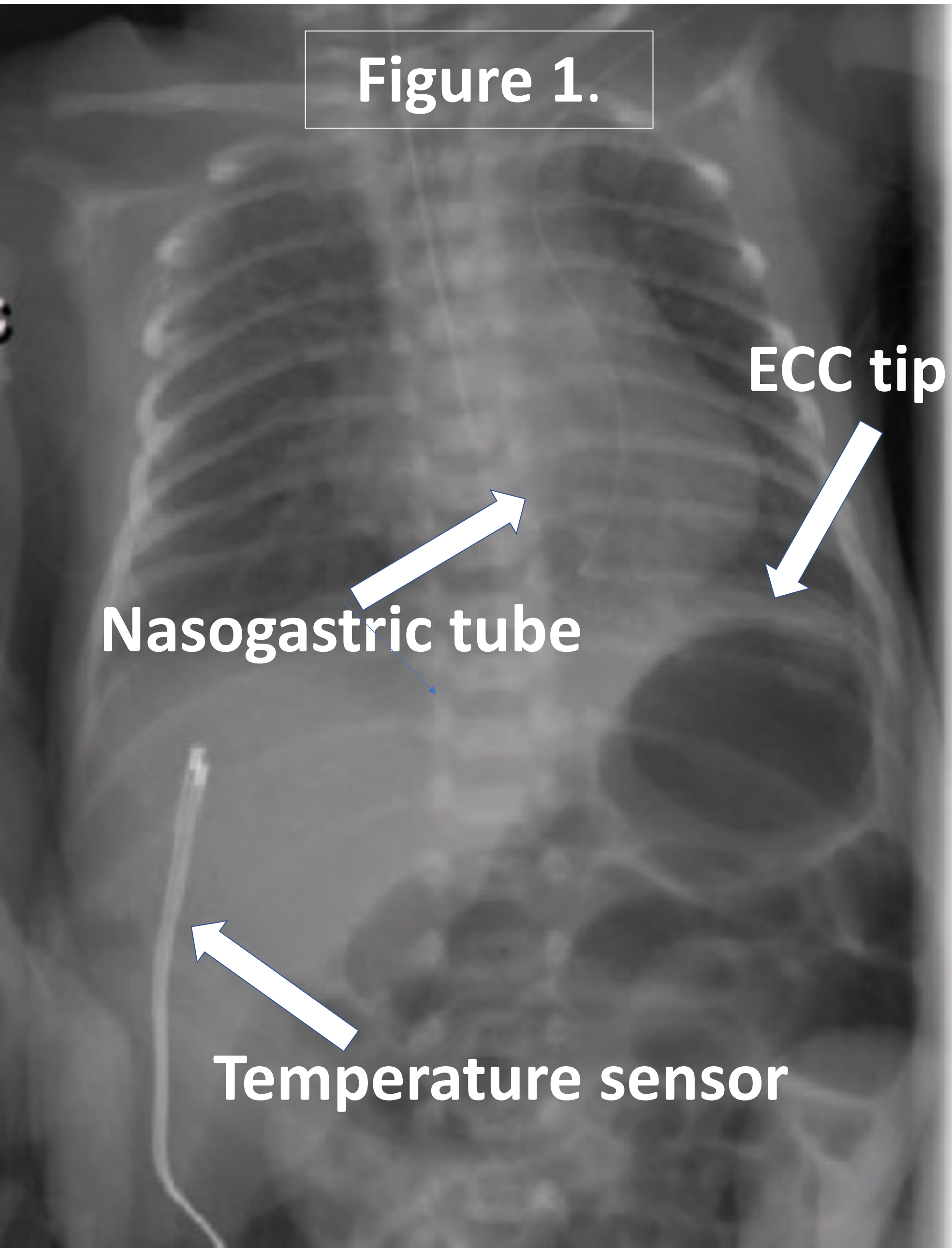
Matheus van Rens¹, Dr. Kevin Hugill², Dr. Aala Eldin Fawzy Mohamed El Fakharany³, Krisha Leigh¹

¹Neonatal Intensive Care Unit, Hamad Medical Corporation, Qatar, ²Nursing Education, Hamad Medical Corporation, Qatar, ³Clinical Imaging Department, Hamad Medical Corporation, Qatar.

Case

A preterm male baby was born at 29 weeks and 5 days by emergency caesarean section. At birth, his Apgar scores were 7 and 9 at one and five minutes, respectively. His birth weight was 1,170g and the physical examination revealed bilateral congenital talipes equinovarus but nothing else of note. On admission to the neonatal intensive care unit (NICU) all his vital signs were stable and within normal/expected ranges. Due to prematurity the need for long-term (>5 days) vascular access was indicated. As per local practice, an initial peripheral IV catheter was inserted, and the baby was scheduled for a Epicutaneo-Caval Catheter (ECC insertion) on day two of life.

After obtaining informed consent, a dedicated IV team performed the actual insertion. After a standardised mandatory vascular assessment, the left cephalic vein was identified as the insertion vein of choice. A pre-measured length of 18cm was determined to enable the ECC tip to be as close as possible to the right atrium but remain outside the heart. Anatomically the ECC should reside inside the superior vena cava and be seen on the right side of the vertebrae/spinal column. A review of the post-procedure X-ray (**FIGURE 1**) showed a descending PICC on the left side of the vertebrae/ spinal column.



Based on these observations, a concern was raised as to the exact catheter placement. The radiologist’s report described: “Left upper limb ECC line appears malpositioned overlying cardiac shadow.” In view of this finding and based on the adage, ‘if in doubt, take it out’, the catheter was removed. A second PICC was inserted without incident into a different vein.

During post-procedure debriefing clinical and radiologist consensus was that a PLSVC (**FIGURE 2**) was the most likely explanation for this ECC’s route. In a recent study Chao et al reported an incidence of 0.29% in a population of healthy neonates. The importance of PLSVC in neonatal care settings lies in a greater association with chromosomal congenital heart defects. Therefore, the recognition of a PLSVC should alert healthcare professionals to these risks and the need for appropriate investigations (eg echocardiography). Most often, when a PLSVC is present, a normal right superior cava is also present.

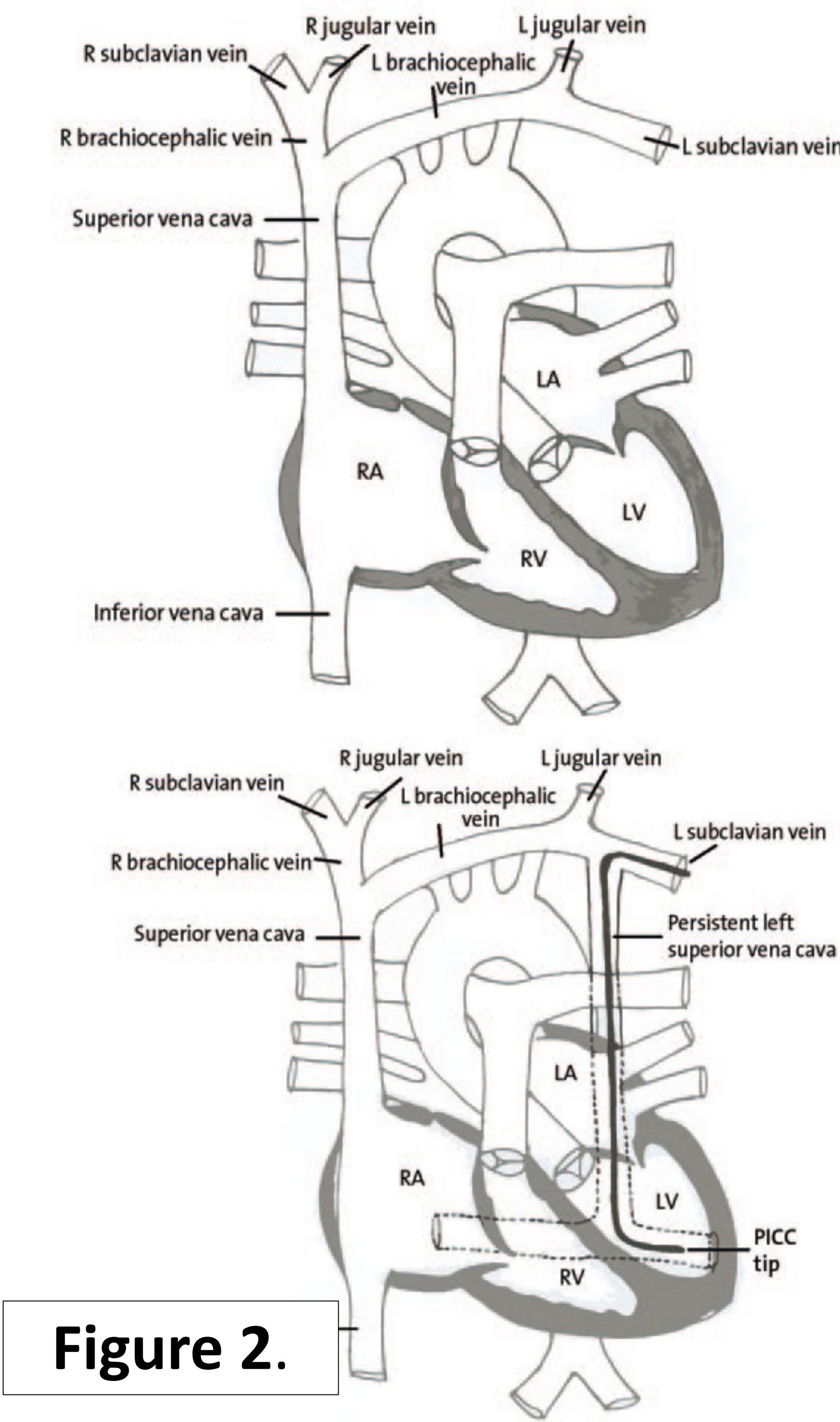


Figure 2.