

BILATERAL CHYLOTHORAX IN A NEONATE FOLLOWING PICC IN THE RIGHT CUBITAL VEIN

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A preterm female baby was delivered by emergency LSCS (indication: severe pre-eclampsia) at 29 weeks of gestation to a sixth gravida mother with history of previous 5 spontaneous first trimester abortions. The birth weight was 920 grams. The baby was admitted to the NICU for stabilization. Peripherally inserted central catheter (PICC) was inserted through the right cubital vein and total parenteral nutrition was started. There was good back flow of blood from PICC and the position was confirmed on X-ray and 2D echocardiography. On day 5, respiratory distress started, that worsened rapidly along with respiratory acidosis. The baby was intubated and was put on mechanical ventilation. Chest radiograph revealed bilateral opacities along with obliteration of costo-phrenic and cardio-phrenic angles [Fig 1]. Ultrasound confirmed bilateral pleural effusion [Fig 2]. Bilateral thoracentesis was done and a total of 40 ml of milky fluid was drained from both the sides [Fig 3]. Biochemical analysis of the fluid revealed a triglyceride content of 473 mg/dl. There was no back flow of blood from PICC. The PICC was removed. Post procedure chest radiograph revealed clear lung field. The baby was extubated 18 hours after the procedure. She did not require intercostal chest tube drainage. The chylothorax did not recur during next 10 weeks of hospital stay. The baby was discharged on day 79 of life.

Unilateral chylothorax following central line insertion is known and well reported. The bilateral presentation of chylothorax is unique and has rarely been reported. Neeraj Kumar and Srinivas Murki reported a case of bilateral chylothorax following umbilical venous catheterization.(1) Thomas J. Johnson described another case in an adult that occurred after PICC insertion. The proposed mechanism was migration of catheter tip into a small vein, erosion of vessel wall by the hyperosmolar solution and subsequent extravasation of fluid.(2)

Though chylothorax is the most common form of pleural effusion in neonates.(3) The diagnosis is quite obvious from the external appearance of the fluid obtained by thoracentesis. At times, the color may not be milky if the baby is not on oral feeds or is on reduced fat diet. On the other hand, empyema and pseudochylothorax can have milky appearance. Therefore, the diagnosis has to be confirmed by biochemical analysis of the pleural fluid. As this condition is potentially fatal, close monitoring of patients on indwelling central catheters, strong clinical suspicion and prompt intervention are crucial management strategies.

Figure 1: Radiograph of the baby showing bilateral opacities suggesting fluid in both the pleural cavities



Figure 2: Ultra sonogram showing fluid



Figure 3: Showing the procedure of thoracentesis and the milky white chylous fluid getting aspirated



REFERENCES

1. Kumar N, Murki S. Bilateral pleural effusion complicating umbilical venous catheterization. *Indian Pediatr.* 2013;50(12):1157–8.
2. Johnson TJ, Jamous FG, Kooistra A, Zawada ET. Iatrogenic chylothorax due to pleural cavity extravasation of total parenteral nutrition in two adults receiving nutrition through a peripherally inserted central catheter. *Hosp Pract.* 2010 Feb;38(1):50–2.
3. Soto-Martinez M, Massie J. Chylothorax: Diagnosis and management in children. *Pediatr Respir Rev.* 2009;10(4):199–207.