

Catheter Malposition into the Internal Thoracic Vein

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An 87-year-old woman had dysphagia due to cerebral infarction and underwent implantation of a totally implantable central venous access port (CVport). The right subclavian vein approach was used under ultrasound and fluoroscopic guidance with the intention of placing the catheter tip in the superior vena cava (Fig. 1A). Seven days after starting total parenteral nutrition (TPN) by CVport, the patient's oxygen saturation dropped, and radiographic examination showed right pleural effusion (Fig. 1B). Computed tomography revealed that the catheter had strayed into the right internal thoracic vein (ITV) (Fig. 1C). The CVport was removed and the pleural effusion was drained, following which, the patient's condition improved. The drained pleural effusion was 1,300 mL, pale yellow and slightly milky, with a glucose concentration of 28.9 mmol/L (blood glucose was 6.1 mmol/L on the same day), which was thought to be an extravascular leakage of TPN, so analysis of cell count, cytology, biochemistry, or bacterial culture of pleural effusion was not performed.

CVport is the standard device to obtain long-term venous access for the administration of chemotherapy or parenteral nutrition. A CVport consists of a port and a catheter. A normal implantation procedure of CVport is to puncture the jugular or subclavian vein and implant the port sub-

cutaneously in the anterior chest wall. Ideally, the catheter tip of the CVport should be positioned at the level of mid-lower superior vena cava to cavoatrial junction. Catheter malposition is an early complication of CVport implantation.¹ There are two types of catheter misplacement: intravenous and extravenous. Its misplacement into a small vein can cause vasculitis and extravascular leakage of fluid.² Usually, vasculitis of the ITV should cause chest pain, but this patient could not complain of pain due to cerebral infarction. Malposition into the ITV is difficult to detect on a frontal-view radiograph.³ Confirmation using fluoroscopic lateral view at the time of CVport implantation can prevent misplacement into the ITV.

CONFLICT OF INTEREST STATEMENT

None declared.

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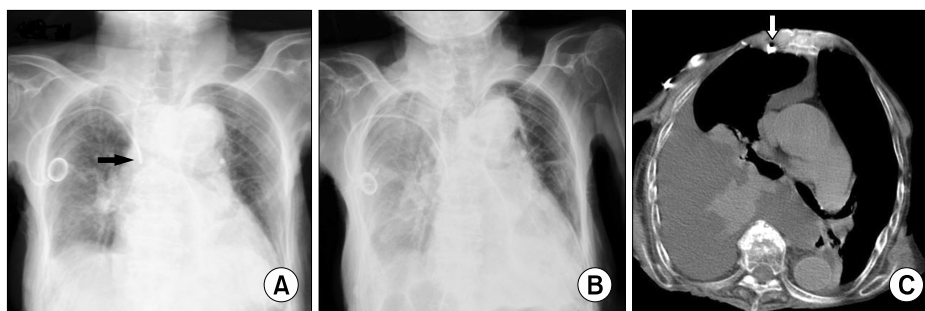


FIG. 1. Images in 87-year-old woman who underwent implantation of a totally implantable central venous access port. (A) The catheter tip (black arrow) appears to be correct position into the superior vena cava on the chest radiograph after procedure. (B) Chest radiograph after seven-days starting total parenteral nutrition shows right pleural effusion. (C) Computed tomography of chest after seven-days starting total parenteral nutrition shows that massive right pleural effusion and the catheter had strayed into the internal thoracic vein (white arrow).

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