



Endovascular Repositioning of a Central Venous Port Malposition in the Internal Thoracic Vein

IMAGES IN CLINICAL
RADIOLOGY

MIKE SALAVRACOS 

FABRICE C. DEPREZ 

**Author affiliations can be found in the back matter of this article*

]u[ubiquity press

ABSTRACT

Malpositioning of a central venous port in the internal thoracic vein can be difficult to check based on single-plane (PA) chest radiographs only, and can be managed by interventional radiology.

Teaching Point: Central venous port malposition in the internal thoracic vein must be detected on postero-anterior chest radiograph and can be repositioned via endovascular procedure.

CORRESPONDING AUTHOR:

Mike Salavracos

UCL St-Luc Bruxelles, BE

salavracos30@hotmail.com

KEYWORDS:

Port; Malposition;
Complication; Thrombosis;
Endovascular

TO CITE THIS ARTICLE:

Salavracos M, Deprez FC.
Endovascular Repositioning of a
Central Venous Port Malposition
in the Internal Thoracic Vein.
*Journal of the Belgian Society of
Radiology*. 2021; 105(1): 3, 1–3.
DOI: [https://doi.org/10.5334/
jbsr.2231](https://doi.org/10.5334/jbsr.2231)

CASE STUDY

We report the case of a 48-year-old woman recently diagnosed with Hodgkin lymphoma. A central venous port (CVP) was inserted in the left sub-clavicular vein by surgery, with no reported complication. A frontal chest radiograph to check the catheter's position was wrongfully interpreted as normal, but actually shows an abnormal angulation of the CVP device at the opening of the brachiocephalic vein in the superior vena cava (*Figure A*, arrow).

No problem was reported when the first chemotherapies were administered via the CVP. After several chemotherapies, the patient started to complain of chest pain on the right side. Moreover there was no more blood reflux.

After re-assessment of the initial chest radiograph, a C-arm cone-beam computed tomography was ordered and demonstrated the incorrect anterior positioning of the last centimeters of the catheter, presumably in the right internal thoracic vein (arrow *Figure B*). Opacification by iodine contrast injection through the CVP showed thrombosis around the tip of the catheter with backflow to the brachiocephalic vein before antegrade flow (arrows, *Figure C*, the white dotted line shows the catheter through ostium of the right internal thoracic vein). Via femoral vein access, we created a loop around the CVP catheter in the left brachiocephalic vein

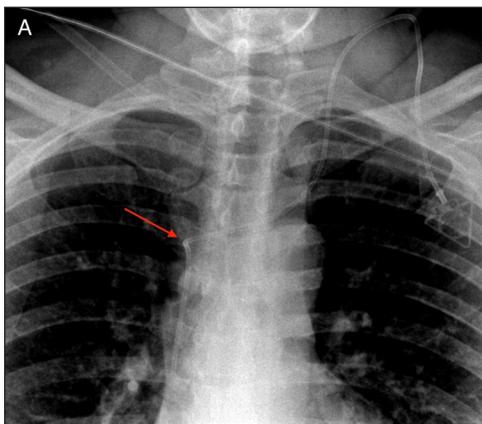


Figure A.

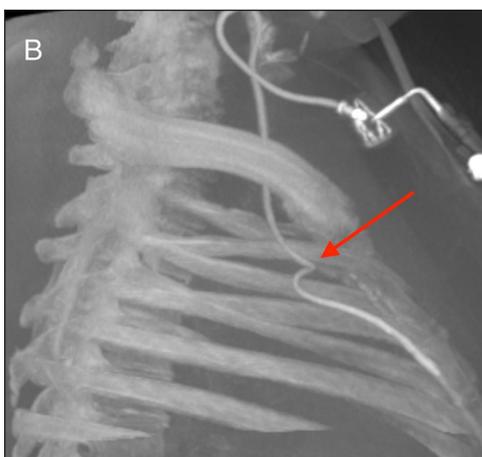


Figure B.

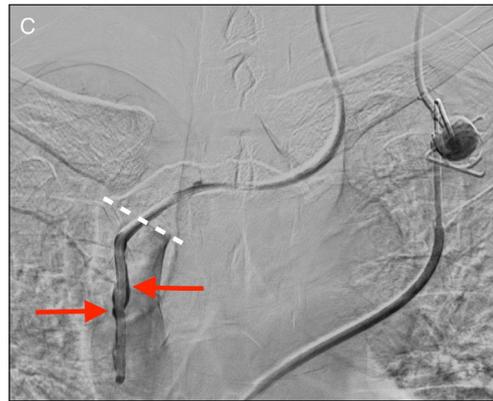


Figure C.

with a guidewire and a snare, allowing for removal of the catheter by traction from the internal thoracic vein.

COMMENTS

The most common complication relating to intravenous devices within the first 30 days after placement is an inadequate positioning of the catheter, whereas later complications include infections, catheter fracture, and thrombosis or stenosis [1].

Radiographic controls are effective in detecting incorrect positioning, fracture, or migration of the catheter. Pain or resistance during injection or absence of blood reflux must lead to CVP revision with iodine contrast injection.

Most of the catheter-related complications can be managed via endovascular techniques from a jugular or femoral vein access, especially catheter misplacement as in the present case. When the tip of the CVP is reachable, it can be directly hooked by a single- or multi-loops endovascular snare and pull or push in the right position; if not, such as in this case, a loop can be created around the CVP catheter with a guidewire and a snare.

COMPETING INTERESTS

The authors have no competing interests to declare.

AUTHOR AFFILIATIONS

Mike Salavracos  orcid.org/0000-0002-7501-3856
UCL St-Luc Bruxelles, BE

Fabrice C. Deprez  orcid.org/0000-0001-6447-5687
CHU UCL Namur, BE

REFERENCE

1. **Machat S, Eisenhuber E, Pfarl G**, et al. Complications of central venous port systems: a pictorial review. *Insights Imaging*. 2019; 10(1): 86. DOI: <https://doi.org/10.1186/s13244-019-0770-2>

TO CITE THIS ARTICLE:

Salavracos M, Deprez FC. Endovascular Repositioning of a Central Venous Port Malposition in the Internal Thoracic Vein. *Journal of the Belgian Society of Radiology*. 2021; 105(1): 3, 1–3. DOI: <https://doi.org/10.5334/jbsr.2231>

Submitted: 08 July 2020 Accepted: 16 October 2020 Published: 11 January 2021

COPYRIGHT:

© 2021 The Author(s). This is an open-access article distributed under the terms of the Creative Commons Attribution 4.0 International License (CC-BY 4.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited. See <http://creativecommons.org/licenses/by/4.0/>.

Journal of the Belgian Society of Radiology is a peer-reviewed open access journal published by Ubiquity Press.

