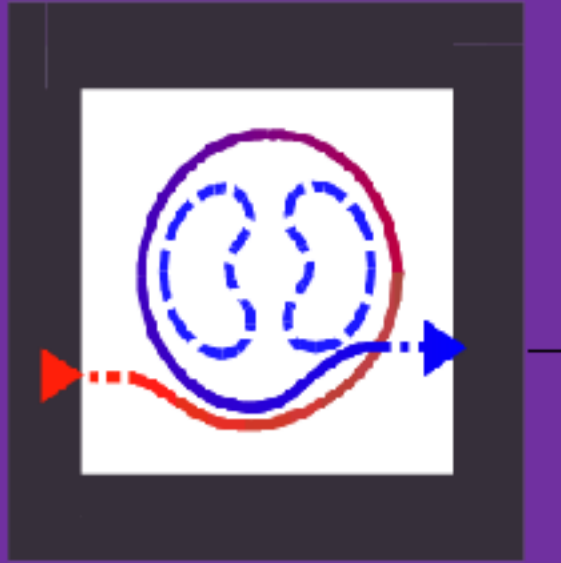


Early complications of percutaneous placement of tunneled dialysis catheters

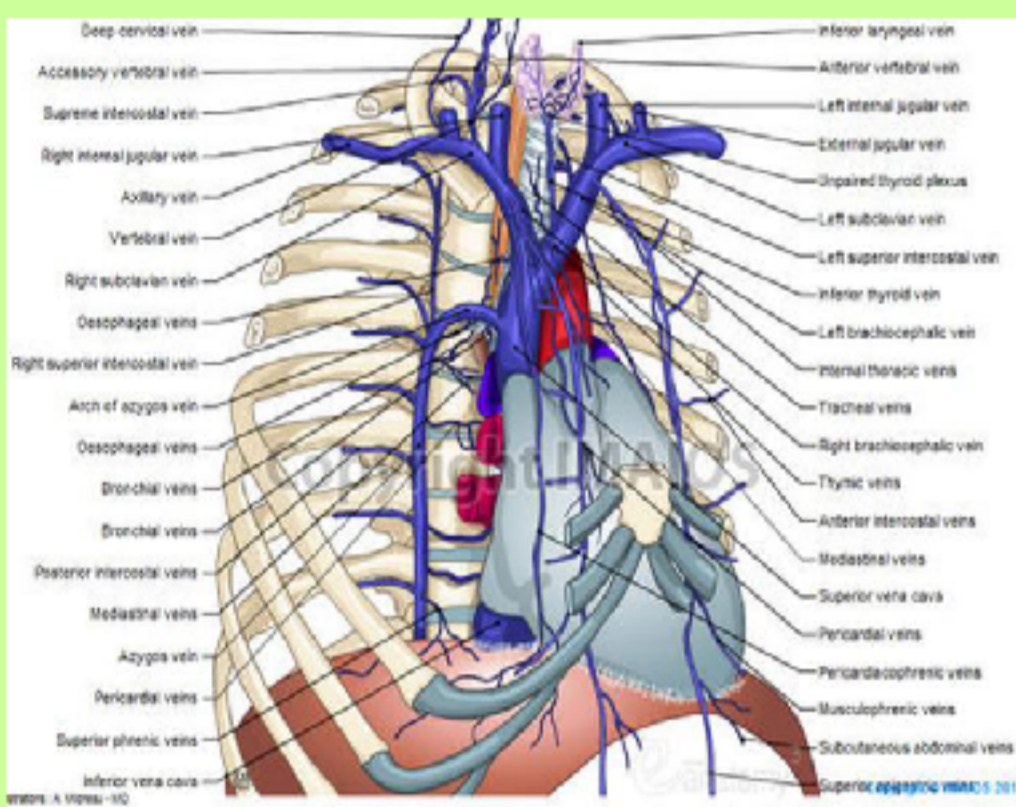


E.Weber, D. Adrych, W. Wolyniec, T. Liberek, B. Rutkowski
 Department of Nephrology, Transplantology and Internal Medicine
 Department of Occupational and Internal Medicine, Institute of Maritime and Tropical Medicine, Gdynia
 Medical University of Gdańsk, Poland

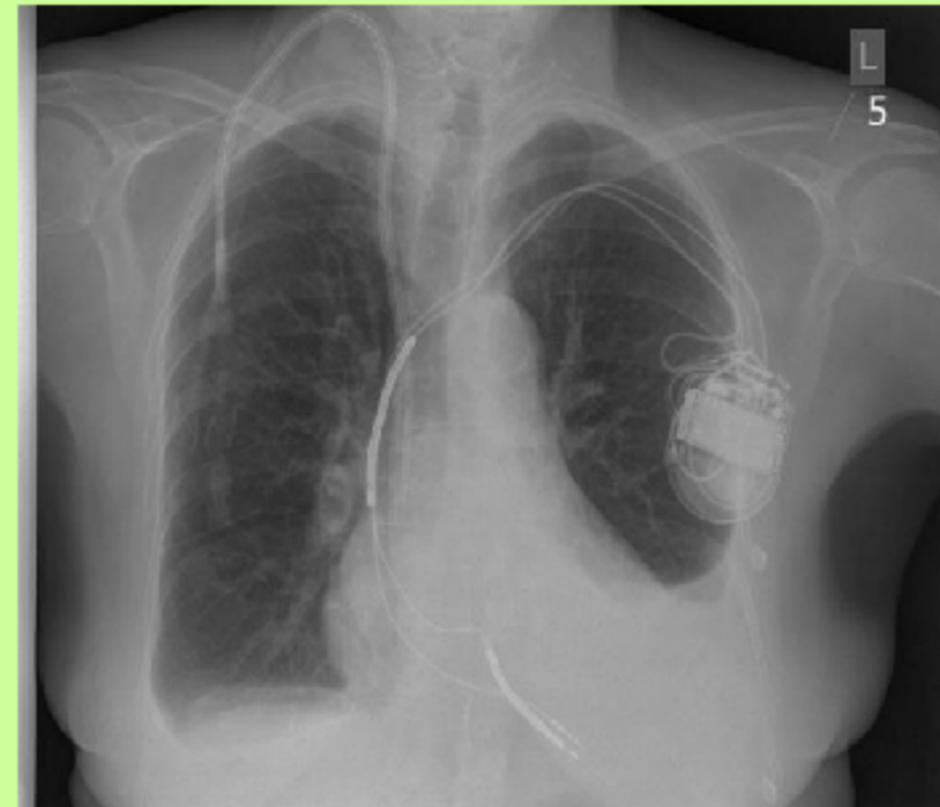


OBJECTIVES

The percutaneous catheterization of central veins is used in nephrological practice as a temporary or permanent dialysis access. The preferred site for catheter insertion is right internal jugular vein (RIJV), due to its straight route, relatively easy access and lowest number of complications. However, in many dialysis patients, especially with the history of previous catheter use, other access sites need to be used. We present early clinical outcome and complications of percutaneous placement of tunneled dialysis catheters.



ANATOMY



Left and right jugular and subclavian veins are used as a vascular access for dialysis and for implementation of cardiac stimulator and pacemaker.

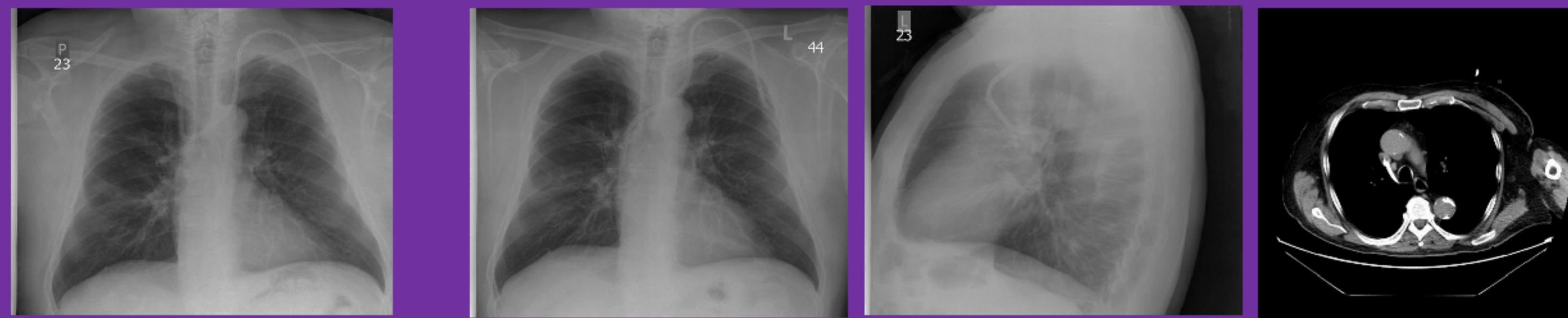
METHODS

During year 2012, 105 cuffed tunneled catheters were placed in 101 patients by the same team of nephrologists. Arrow Cannon II catheter (with backward tunneling) was used in 93 cases, Bard Hemo Split in 10 cases and Tal Palindrome in 2 cases.

Both IJV were located with ultrasound and the preferred vein was marked on the skin.

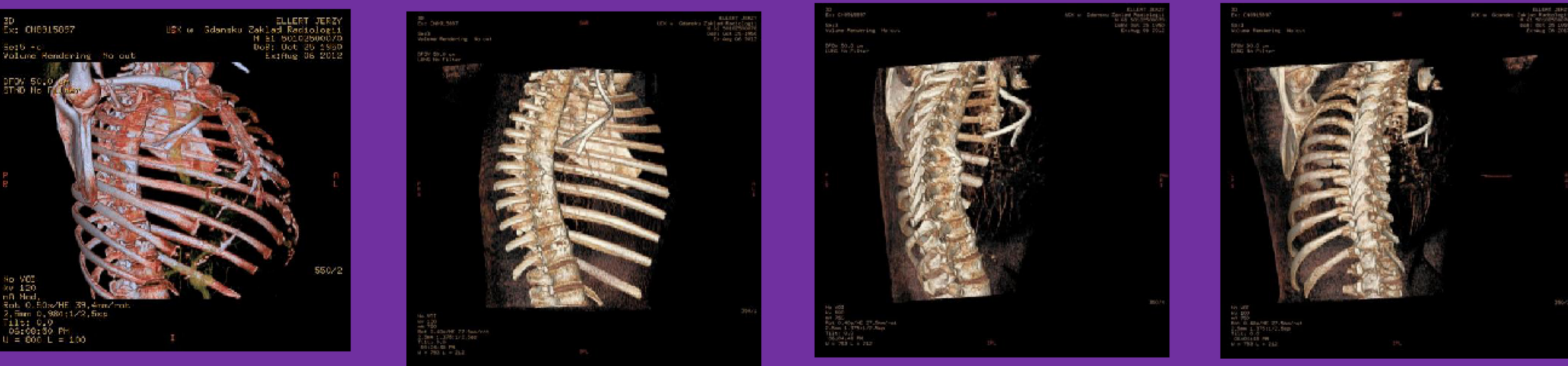
After insertion both arms of the catheter were tested for patency, flushed with heparinized saline, filled with respective volume of heparin solution (5000 U/ml) and control chest X-ray was performed.

EARLY COMPLICATIONS

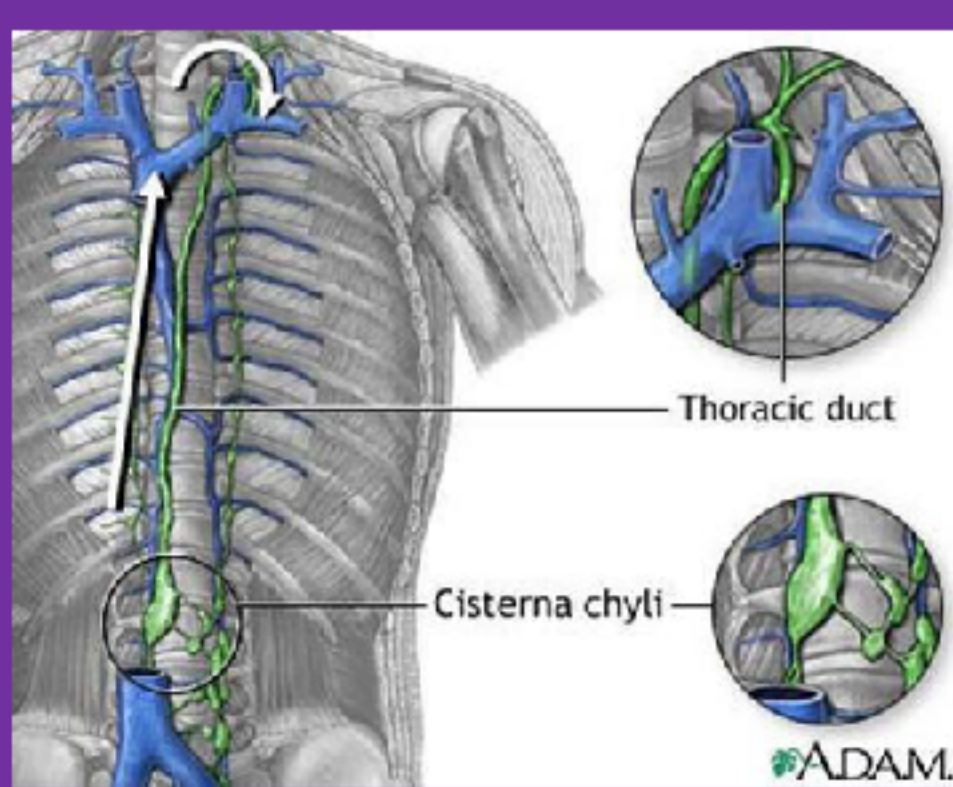


Malposition into the right brachiocephalic vein

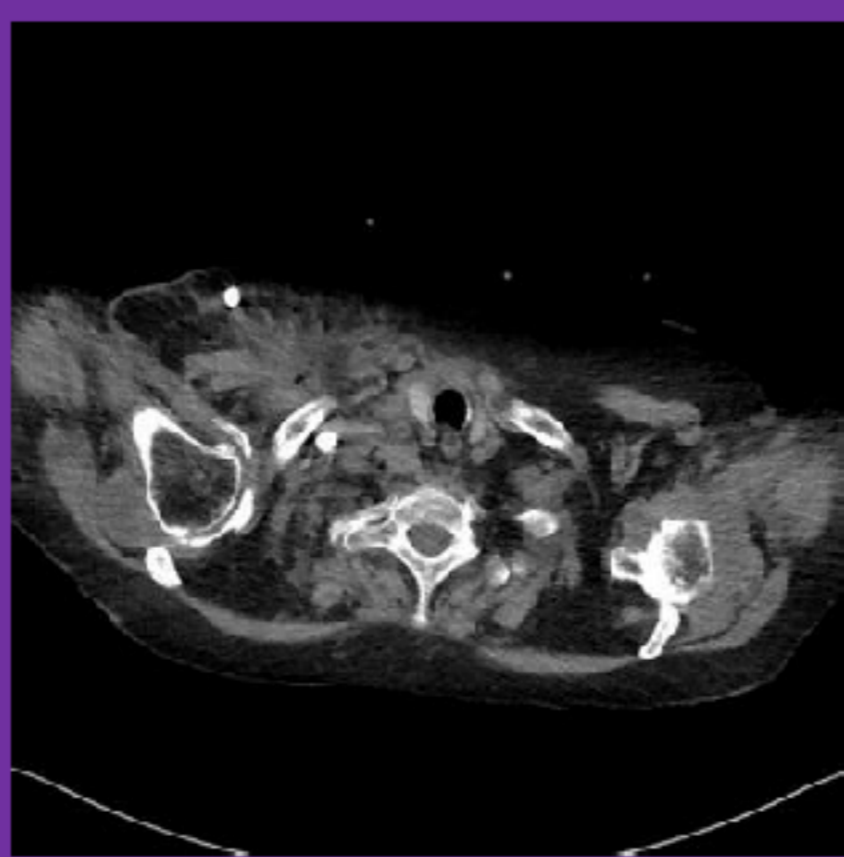
Malposition into the vena azygos



Malposition into the vena azygos



Anatomy of thoracic duct



A huge local hematoma

RESULTS

In 69 cases catheter was inserted into RIJV, in 20 cases into left internal jugular vein (LIJV). Right and left subclavian veins were used in 3 and 2 cases, and right and left femoral veins in 6 and 5 cases, respectively.

Local hematomas and prolonged wound bleeding was the most common complication of insertion procedure, similar on the right and left side (66% vs.55,5%). In one case, after left femoral vein cannulation, bleeding was so severe that patient died despite transfusions and vascular surgery intervention.

In 1 case thoracic duct was punctured. There were no cases of immediate malfunction when the catheter tips were properly positioned.

Malposition of the catheter tips occurred only with LIJV insertion. They included malposition into the right innominate vein (2 cases), and into vena azygos (4 cases).

In all cases position of catheter tips were corrected under fluoroscopic control by partial withdrawal of the catheter and subsequent insertion.