

Off label use of PICC as a femoral catheter inserted in an almost non-cannulated patient

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INTRODUCTION

Peripherally inserted central catheters (PICCs) are long-term vascular access devices commonly used for delivering chemotherapy, antibiotics or parenteral nutrition. PICCs are inserted under ultrasound guidance and ECG navigation using deep arm veins with the tip localised in the cavoatrial junction (the lower third of the superior vena cava - SVC).

We are presenting a case report of a 39 years old patient with rapid progressive sarcoma with metastatic spread to the lungs and bones. He had multiple comorbidities, and at the time of admission he was in a life-threatening situation. For several years, he used peritoneal dialysis (required for underlying chronic renal failure), he also had cardiomyopathy and ongoing infectious endocarditis requiring intravenous antibiotics for a long time period (approx.6 weeks). Over the period of 20 years, he suffered from chronic kidney disease. He underwent multiple repeated cannulations with the insertion of multi-lumen dialysis catheters to various veins (jugular veins bilateral, axillary veins bilateral, femoral veins bilateral) which caused consumption of the peripheral venous system. Multiple AV fistulas on both shoulders were used for dialysis, and as they were calcified due course, they became not patent. He suffered from tumour thrombosis of the right femoral vein as well. Patient was admitted to medical oncology department for start of systemic treatment of aggressive metastatic sarcoma (lungs, bones). At the time of admission he was tested positive for COVID 19 (RT-PCR) and was transferred to the COVID Department where he developed extensive bilateral COVID related pneumonia with hyposaturation. Patient sustained a fracture with dislocation of the right humerus following a fall. The fracture was located in the area of massive bone metastasis.

Due to his serious current clinical condition, he required urgent central venous access for administration of intravenous fluids, antibiotics, parenteral nutrition and appropriate analgesia. But in this case, the patient was almost non-cannulated.

METHODS

According to the GAVACELT guidelines in COVID patients, the PICC line is recommended as a safe and simple central venous access in this indication.

This patient required a safe central venous access, because of intravenous administration of antibiotics for the treatment of endocarditis. Use of the upper part of the body was excluded for insertion of PICC line, because of above listed serious comorbidities. Due to kidney transplantation in the past and rejection of the graft after 2 years, which resulted to explantation of donor kidney, the condition of renal vessels was not known. There was a high chance of venous stenosis, which could occur due to scarring. Decision was made to use the PICC “off label” to insert the line into the left femoral vein, the only accessible vein for insertion in this case.

We used ultrasound guided cannulation with ECG navigation and successfully inserted a 4Fr one-lumen tunnelled PICC line (55cm) through the left femoral vein without complications. Distal end of the PICC line was verified with X-ray, to ensure the right tip position.

DISCUSSION and CONCLUSION

We managed a safe cannulation in this patient at risk, in spite of obstacles, to ensure a safe central venous access.

Real-time ultrasound-guided PICCs accessed via femoral vein is a modified technique with low complications, which can be a feasible and safe alternative venous access for patients with contraindications to cannulation of upper part of the body.

In conclusion, there is always a way how to cannulate a central vein and failure of cannulation is very seldom. The physician must select the most convenient technique and find the most suitable vein for successful insertion of the catheter.

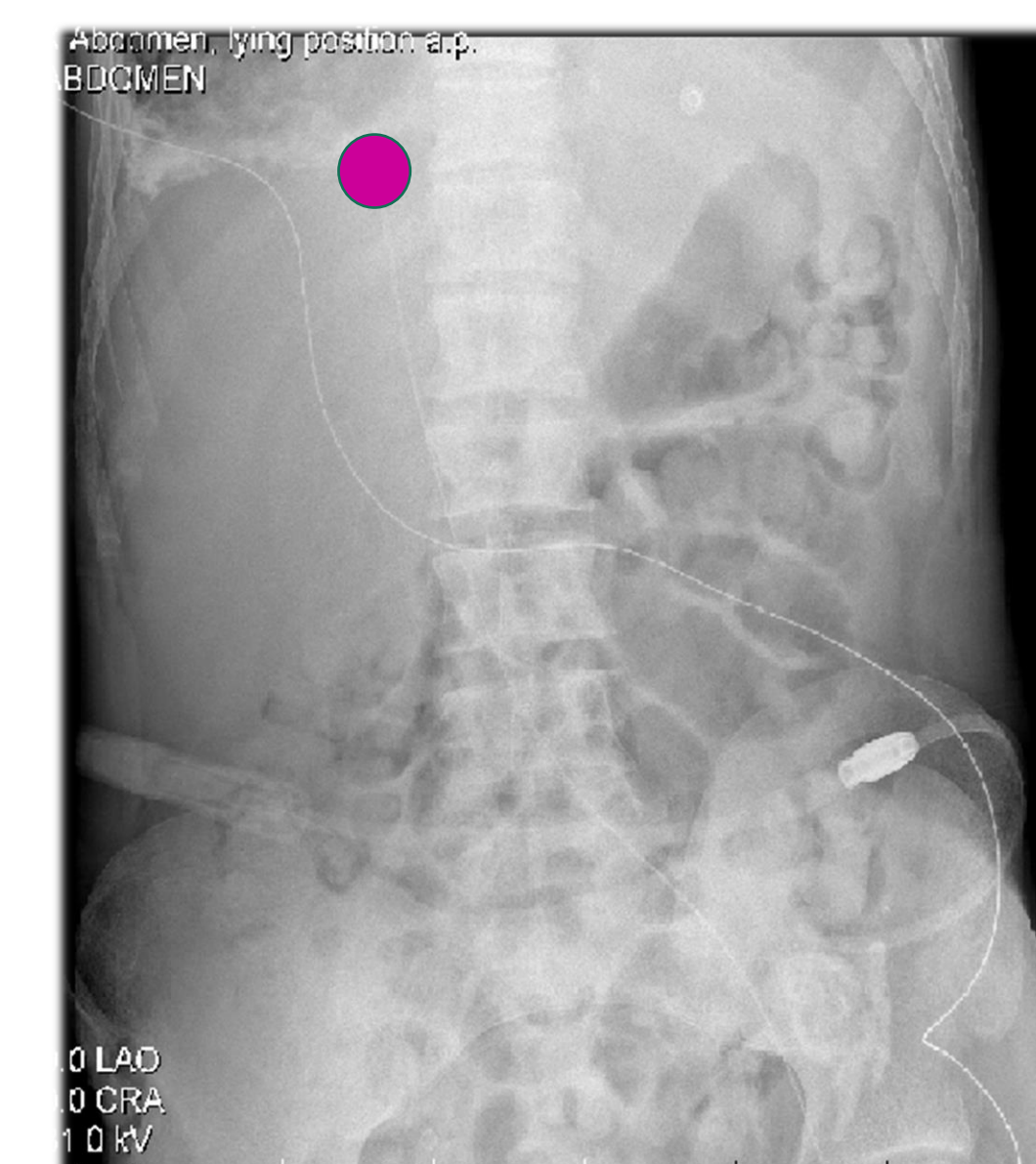
Picture 1: Patient with multiple AV fistulas on both shoulders (used for years for dialysis, calcified AV fistulas - they became not patent), catheter for peritoneal dialysis (see arrows); after multiple central vein cannulations; after thyroid gland operation; thrombosis of the right femoral vein with collaterals



Picture 2: PICC insertion - ultrasound guided cannulation with ECG navigation
4Fr one-lumen tunnelled PICC line (55cm) through the left femoral vein inserted without complications.



Picture 5: Distal end of the PICC line was verified with X-ray, to ensure the right tip position.



Picture 3: a fracture of the right humerus with dislocation following a fall. The fracture was located in the area of massive bone metastasis.



Picture 4: chest X-ray – bilateral COVID related pneumonia



Picture 6: PICC team and COVID_19 team after successful cannulation (and patient also satisfied)



DISCLOSURE: authors have nothing to disclose

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