

Experience with long peripheral catheter in DIVA patients – the significance of ultrasonography

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• Introduction

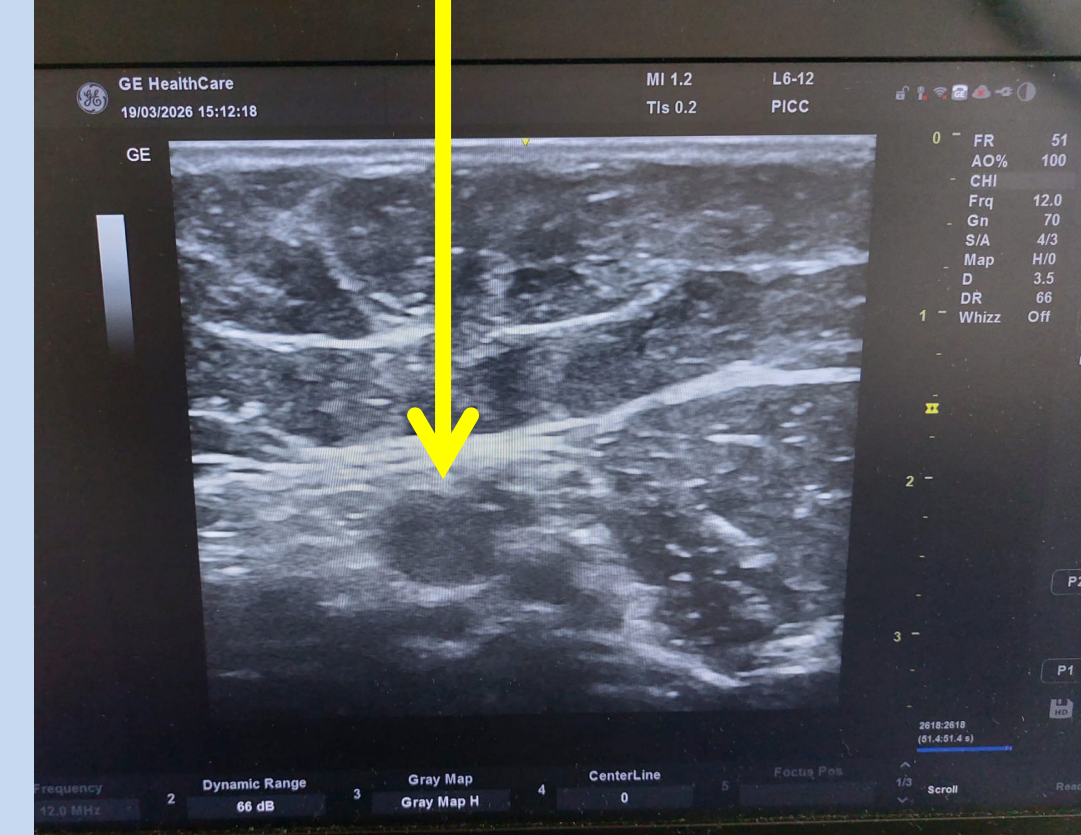
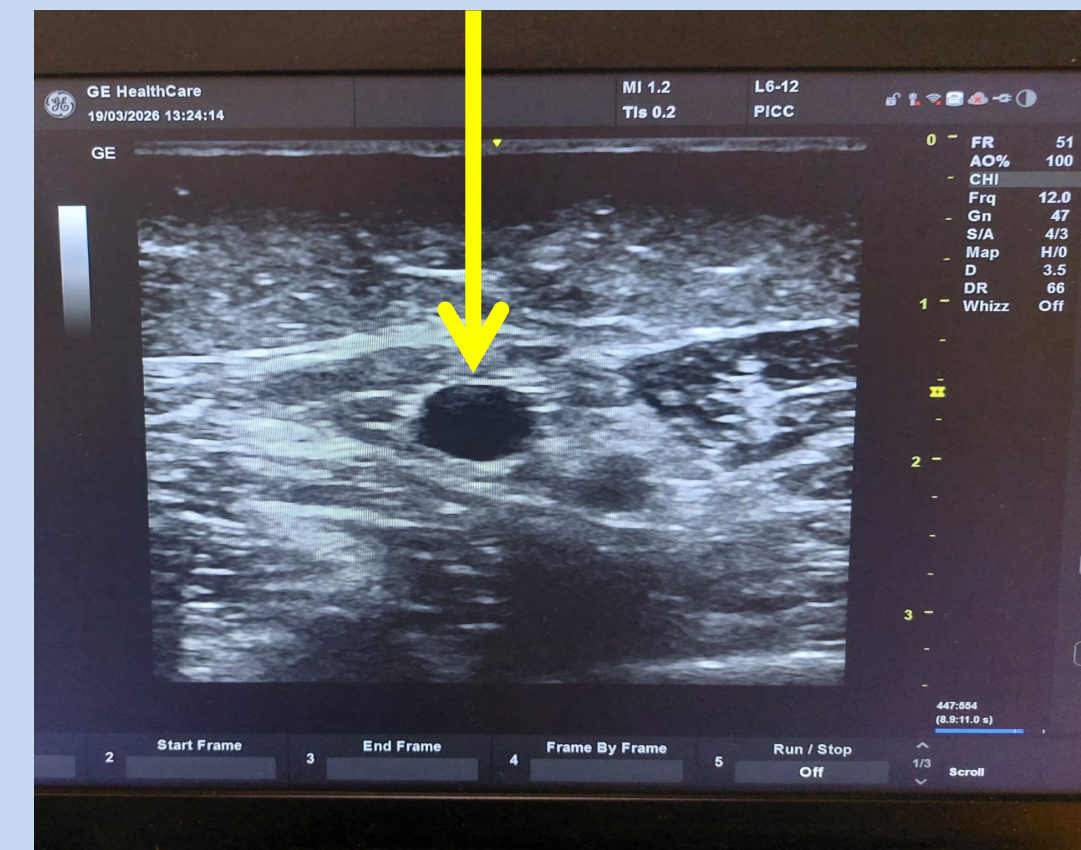
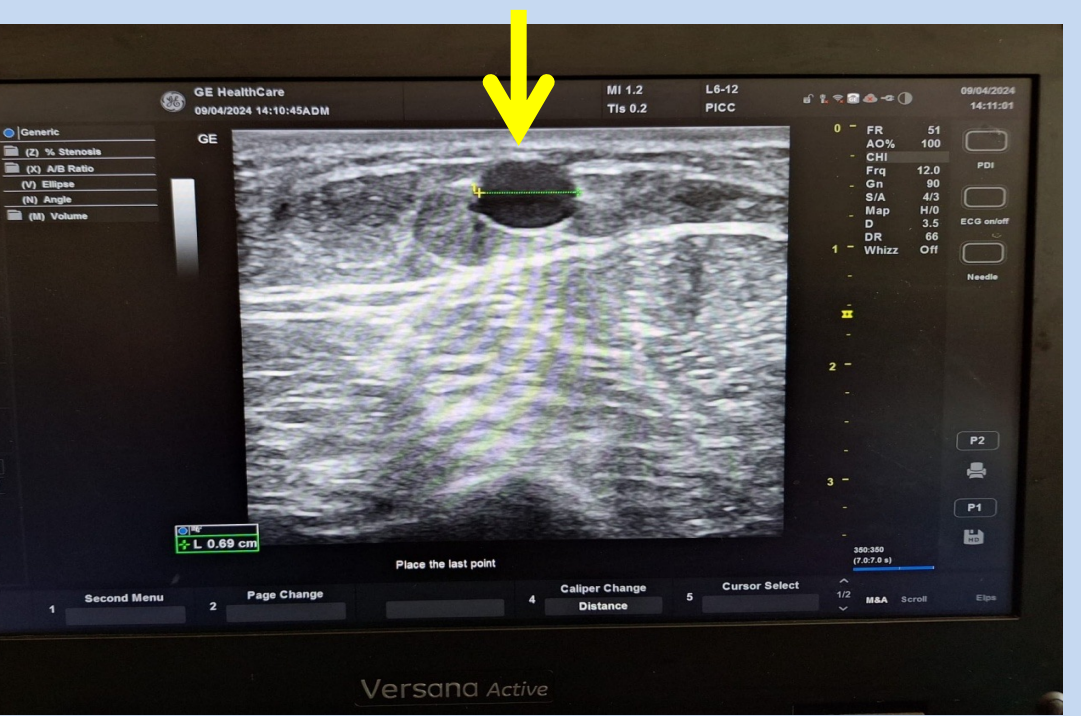
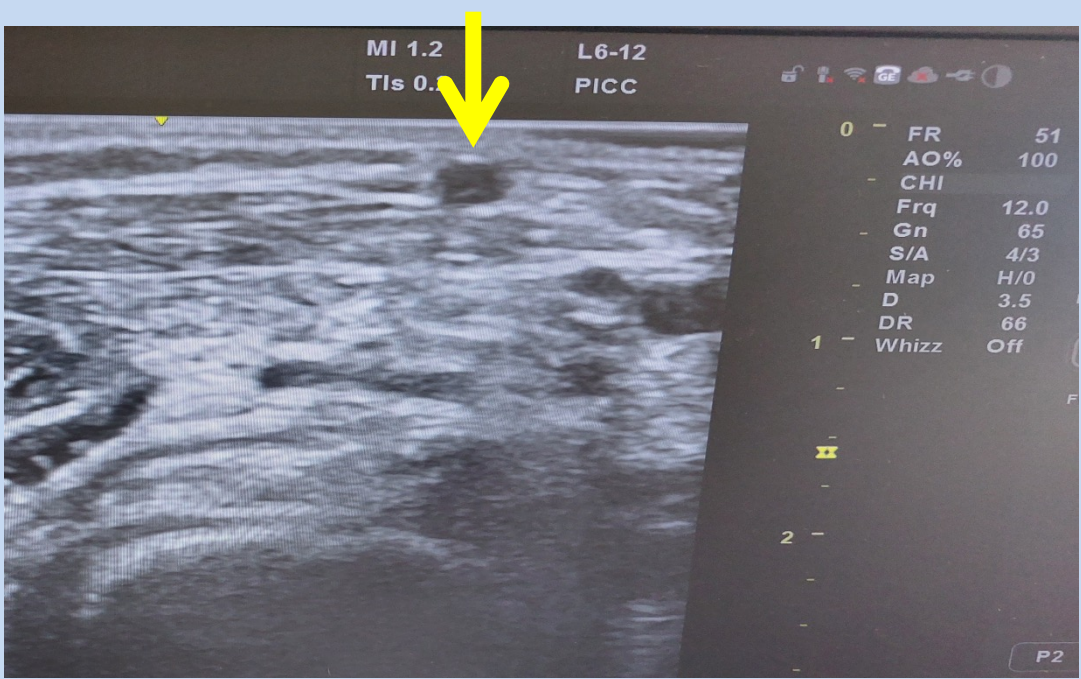
A long peripheral catheter (LPC) is indicated for patients with DIVA who do not require central venous access. There are several types of LPC with different sizes and lengths. The size of the LPC should not be larger than one third of the vein size. Since at least two thirds of the LPC should be placed in the venous lumen, the length of the selected LPC also depends on the depth of the vein to ensure device stability. In our previous study, we found that there was **no difference in complication rates and dwell time between different LPCs when respecting the above-mentioned catheter-vein relationship.**(1)The aim of our report was to evaluate the frequency of different LPCs in the veins of the forearm and arm after LPC selection based on clinical and ultrasound examination.

The relation between lenght of LPC and the depth of vein (1)

6.4 cm catheter	maximum vein depth 0.7 cm
8.5 cm catheter	maximum vein depth 1.5 cm
9.8 cm catheter	maximum vein depth 2.0 cm
12.0 cm catheter	no depth limitation

• Methods

The adult DIVA patients (18 years and older) with LPC insertion at tertiary hospital during 2025 were included in our observation. After a suitable vein was selected based on the clinical and ultrasonographic examination, the appropriate optimal LPC was inserted – LPCs with lengths from 6.4 to 12 cm and sizes from 18 to 22G were available. The number of various LPCs inserted into different sites was evaluated as well as the types of LPCs inserted into each site.



• Results

During 2025, a total of 1163 LPCs were inserted in DIVA patients under ultrasound guidance. The median age was 76 years (19-100 years), 785 (67%) were women and 378 (33%) were men. The frequency of inserted LPC catheters into selected veins based on clinical and ultrasound examination is shown in the table:

Catheter lenght	12cm	9.8cm	8.5cm	6.4cm	total
Vena brachialis	274	108	120	40	542
Vena basilica	124	62	68	25	279
Vena cephalica	52	38	76	156	322
Forearm veins	0	0	0	20	20
Total	450	208	264	241	1163

• Conclusion

Based on the clinical and ultrasonographic examination LPC of the appropriate length and size can be selected. While catheters of about 10 cm or more in length are frequently required for the insertion to deep veins in arm (vena brachialis and vena basilica), a 6.4 cm and 8.5 cm LPCs are often suitable for superficially located veins (especially the cephalic vein on the arm).

• References:

1. Lisova K, Pavelkova K, Šimkova P, Mokra D, Palova S, Charvat J. The selection of the suitable long peripheral catheter in DIVA patients: The significance of ultrasonography. J Vasc Access. 2024 Nov;25(6):1775-1779

