

Nurse anesthetist-performed PICC insertion:

A prospective longitudinal study in a Norwegian hospital

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Background

Most hospitalized patients require vascular access for intravenous treatment. A PICC (Peripherally Inserted Central Catheter) is indicated for long-term therapy requiring central venous access.

In many Norwegian hospitals, PICC insertion is a nurse anesthetist-led initiative — combining procedural expertise with patient-centered care.

Study aim:

To examine PICC use from insertion to treatment completion and to identify potential risk factors for catheter-related complications.

Method

Study design:

Quantitative prospective longitudinal study

Data collection:

- Electronic patient records (EPR)
- Telephone surveys with patients every 4th week until catheter removal

Analysis:

SPSS version 28

Population:

All PICCs inserted by nurse anesthetists at Østfold Hospital Trust within the study period

Results

401

PICCs total

163

> 30 days use

41

Complications

Primary indications:

Antibiotics (n=272) · Nutrition (n=46) · Chemotherapy (n=42)

- Most frequent complication: Erythema at insertion site (n=12)
- Most severe: Deep venous thrombosis (n=5), confirmed CRBSI (n=4)
- After 4 weeks: 12 patients reported complications; pain/numbness most frequent (n=4)

No statistically significant covariation between complications and age, catheter dwell time, indication, venous diameter, or insertion attempts.

Conclusion

Low incidence of severe PICC-related complications in this study population.

PICCs were inserted and managed in accordance with local clinical guidelines.

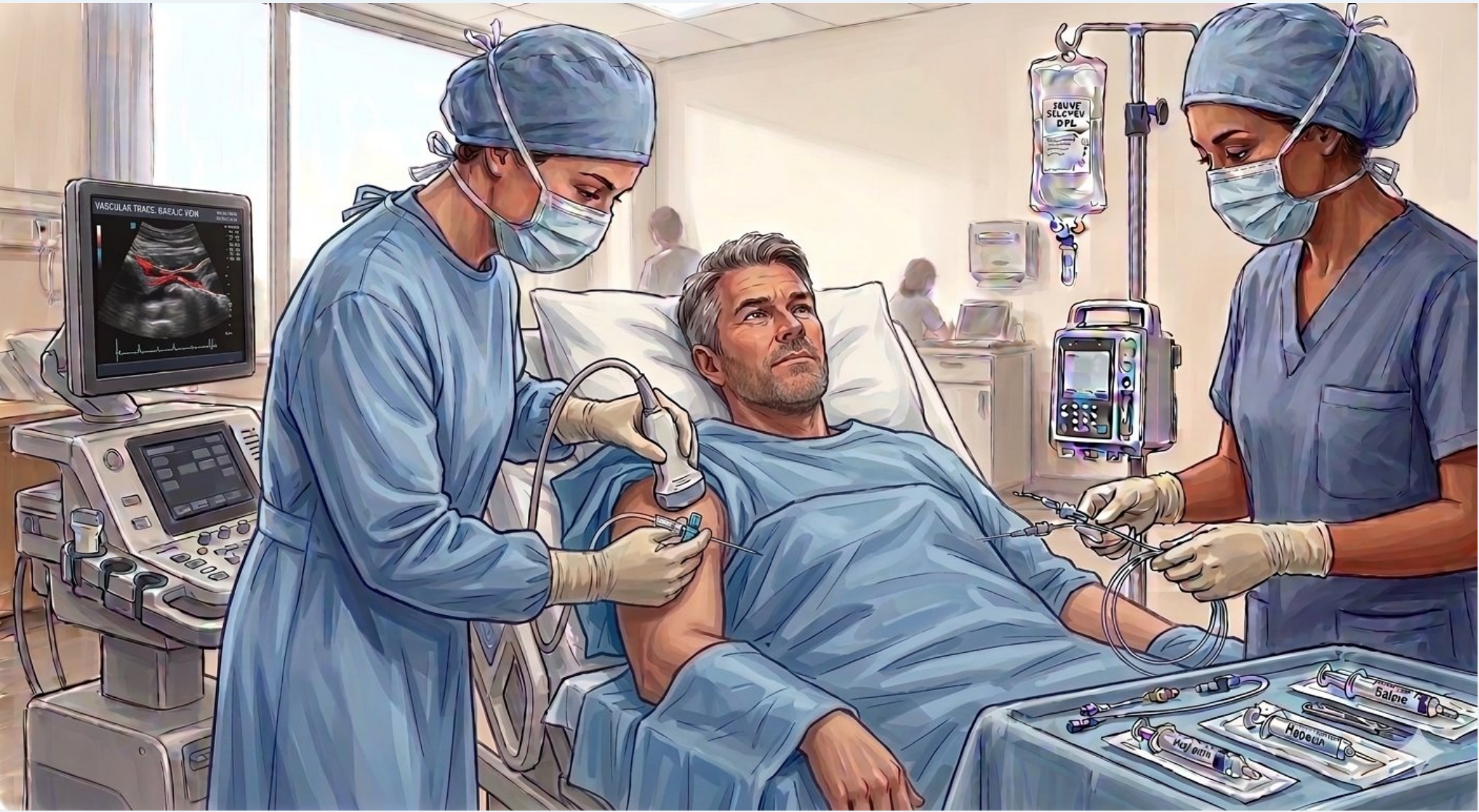
Key implications:

Nurse anesthetists' knowledge and clinical experience should be utilized in:

- Future selection and insertion of vascular access devices
- Training and education on PICC care
- Guideline development and quality improvement

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Ultrasound-guided PICC insertion — AI-generated illustration (Gemini)

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PICC treatment in progress — AI-generated illustration (Gemini)

