

“To determine the relative likelihood of upper limb venous thrombosis (ULVT) in patients with peripherally inserted central catheter (PICC) versus central venous catheter (CVC), compared with patients without a catheter, in a tertiary hospital setting.” Ye et al (2014).

Reference:

Ye, X., Wong, S.W., Zhang, J., Moo, I.H. and Lee, C.C. (2014) Catheter-related upper limb venous thrombosis in a tertiary hospital setting. ANZ Journal of Surgery. October 7th. .

Abstract:

BACKGROUND: To determine the relative likelihood of upper limb venous thrombosis (ULVT) in patients with peripherally inserted central catheter (PICC) versus central venous catheter (CVC), compared with patients without a catheter, in a tertiary hospital setting.

METHODS: Retrospective review of all upper limb venous duplex ultrasounds performed for the investigation of venous thrombosis from the Prince of Wales Hospital Vascular Diagnostic Laboratory between July 2009 and October 2012 was conducted. Multivariate logistic regression analysis was used to determine the association between risk factors and the presence of ULVT. The total number of lines inserted was determined from medical, electronic and departmental records.

RESULTS: Eight hundred and seventy-six US scans in 637 patients were identified yielding 213 cases of ULVT. ULVT was found in 38/85 scans in patients with PICC, 36/103 scans in patients with CVC and 139/688 scans in patients without a catheter in situ. Compared with patients without catheters, the odds ratio (OR) for developing ULVT was 3.5 ($P < 0.001$) for PICC and 2.1 ($P = 0.002$) for CVC. Previous deep venous thrombosis ($OR = 11.60$; $P < 0.001$) and malignancy ($OR = 2.10$; $P < 0.02$) were additional risk factors. Median time from catheter insertion to diagnosis was 10 days for PICC and 19 days for CVC. The incidence of pulmonary embolism (PE) was 1.8%. The overall 6-month mortality for patients with PICC was 5.9% and CVC was 17.7%. A total of 1855 PICC and 2435 CVC were inserted. The incidence of ULVT was 2.05% per PICC and 1.48% per CVC inserted ($P = 0.08$).

CONCLUSION: Catheters predispose to the formation of ULVT. PICCs are more likely to be associated with ULVT than CVC and have shorter time to symptomatic clot. PE from ULVT is uncommon.

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