
Abstract:

PURPOSE: Peripherally inserted central catheter (PICC) spontaneous dislodgment is insidious in onset and prone to cause complications. We performed a prospective cohort study to examine the incidence, risk factors and clinical results of PICC spontaneous dislodgment in oncology patients to facilitate successful early diagnosis, prophylaxis and management.

PATIENTS AND METHODS: Consecutive oncology patients, undergoing placement of PICCs, were enrolled and prospectively followed up until their catheters were removed or PICC spontaneous dislodgment presented. The patients with PICC spontaneous dislodgment or catheter-associated thrombosis (CRT) were followed up for an extra three months from the date of diagnosis. The main endpoint was PICC spontaneous dislodgment, and the sub-endpoints were CRT and catheter in-place time. The PICC insertion team, nurses, interventional radiologists and oncology doctors collected longitudinal data.

RESULTS: Over a total of 60,894 days of cumulative follow-up, 21 out of 510 PICCs presented spontaneous dislodgment, leading to an incidence rate of 4.12%. The CRT rate of the group with PICC spontaneous dislodgment was much higher than that of the group without PICC.
spontaneous dislodgment (RR=17.46, 95% CI: 8.29-36.82, p=1.09×10-17). Five baseline exposure factors, including primary lung cancer, metastatic lung cancer, chest radiotherapy, vigorous coughing and severe vomiting, were significant risk factors of PICC spontaneous dislodgment. Basilic vein access (odds ratio =0.39, 95% CI: 0.16-0.95, P=0.04) was a protective factor against PICCSD in univariate analysis. Among these factors, the independent significant risk factors were vigorous coughing (OR=6.14, 95% CI: 1.70-22.16, P=0.01) and severe vomiting (OR=3.70, 95% CI: 1.28-10.68, P=0.02).

CONCLUSION: The incidence rate of PICC spontaneous dislodgment is 4.12% (0.34 per 1000 catheter-days); PICC spontaneous dislodgment significantly increases the risk of CRT and shortens catheter in-place time. Vigorous coughing and severe vomiting were independent risk factors of PICC spontaneous dislodgment among oncology patients.