



This study evaluated the incidence of central vein occlusion (CVO) and analyzed the interventional management for CVO during peripherally inserted central catheter (PICC) placement to suggest an adequate management protocol to ensure the success and patency of PICCs” Yeon et al (2018).

Abstract:

OBJECTIVE: This study evaluated the incidence of central vein occlusion (CVO) and analyzed the interventional management for CVO during peripherally inserted central catheter (PICC) placement to suggest an adequate management protocol to ensure the success and patency of PICCs.

METHODS: We retrospectively reviewed the records of 2568 PICCs to identify CVO in two medical centers between January 2016 and June 2017. Procedural images were reviewed for the following items: date and indication for the PICC; type of catheter; accessed vein and arm; characteristics of CVO on ascending arm venography; PICC placement technique; indwelling period of the PICC; and follow-up records. A guidewire passage trial was performed to the CVO, as follows: a trial with a 0.018-inch single or double guidewire through the pretrimmed PICC lumen; and a trial with a combination of a 0.035-inch guidewire and a curved 5F diagnostic catheter through the PICC introducer sheath.

RESULTS: The incidence of CVO was 3.2% (71/2232), and 59 patients were analyzed (23 men; mean age, 69 ± 11 years; median age, 80 years; age range, 31-92 years). Forty-four patients had thrombotic CVO, and 12 patients had acute thrombotic CVO. Thirty-six patients had occlusion of the left innominate vein, and six patients had contiguous involvement of the adjacent central vein. Forty-two patients had obtuse stump morphology of CVO, and 28 patients had grade >III collateral development. The PICC indwelling time was statistically different between the group with successful catheter advancement ($n = 36$, success group) and the group with failed catheter advancement ($n = 18$, failure group; $P = .007$) with ipsilateral trimmed PICCs. Eight patients had a symptomatic catheter associated with upper extremity deep venous thrombosis (UEDVT; <30 days), one in the success group and seven in the failure group. The incidence of catheter-associated UEDVT after primary PICC placement on each arm was statistically different between the success and failure groups ($P = .004$).

CONCLUSIONS: A PICC passage trial for ipsilateral CVO is challenging but frequently successful with a simple guidewire technique, which can preserve catheter patency, decrease contralateral arm access, and prevent the development of new catheter-associated UEDVT.

Reference:

Yeon, J.W., Cho, Y.K., Kim, H.M., Song, M.G., Song, S.Y., Cho, S.B. and Lee, S.Y. (2018) Interventional management of central vein occlusion in patients with peripherally inserted central catheter placement. *Journal of Vascular Surgery. Venous and Lymphatic Disorders*. March 31st. .

doi: 10.1016/j.jvsv.2018.01.006.

