



To explore the hypothesis that central venous stenosis/obstructions (CVS/O) in children are influenced by prior central venous access devices (CVADs) and are associated with future risk for thromboses” Gnannt et al 92019).

Abstract:

**PURPOSE:** To explore the hypothesis that central venous stenosis/obstructions (CVS/O) in children are influenced by prior central venous access devices (CVADs) and are associated with future risk for thromboses.

**MATERIAL AND METHODS:** A convenience sample of 100 patients with abnormal venography (stenosis, collaterals, occlusions) documented during peripherally inserted central catheter (PICC) placements were identified from consecutive PICC placements (January 2008 to November 2012). The patients (41 males, 59 females, median age 2.7 years, median weight 11 kg) were categorized based on venographic presence (Group A, n = 53) or absence (Group B, n = 47) of visible connection to the superior vena cava. Each patient’s CVAD history, before and after venography, was analyzed (until October 2016).

**RESULTS:** Before venogram, Group B patients were associated with a higher number of previous CVADs, larger diameter devices, greater incidence of malposition, and more use of polyurethane catheters than Group A patients ( $P < .001$ ). An ipsilateral PICC was successfully placed in 98% of Group A, compared to 32% of Group B ( $P < .001$ ). After venogram,

significantly more Doppler ultrasounds (DUS) were performed and thromboses diagnosed in Group B (57% and 36%) compared to Group A (21% and 8%) ( $P < .003$ ;  $P = .001$ ), respectively. CONCLUSIONS: Previous catheter characteristics influenced the severity of venographic changes of CVS/O (Group B). Group B was associated with more subsequent symptomatic thromboses. This information may assist parents and referring physicians to anticipate potential adverse sequelae from CVS/O on the child's venous health.

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### Reference:

Gnannt, R., Chamlati, R., Waespe, N., Amirabadi, A., Donnellan, J., Amaral, J., Parra, D., Brandão, L.R. and Connolly, B. (2019) Clinical Impact of Chronic Venous Changes Induced by Central Lines in Children: A Cohort with Abnormal Venograms. *Journal of Vascular and Interventional Radiology*. March 27th. . doi: 10.1016/j.jvir.2018.08.034.

