Abstract

Introduction: Obstruction of the access vein is a well-known complication after transvenous permanent device implantation. In that case, well-developed collateral superficial veins are frequently observed. We assessed the relationship between the venous obstruction and development of the superficial veins.

Methods: A total of 100 patients scheduled for generator replacement were enrolled. The skin surface around the device was photographed. Contrast medium was injected into the peripheral arm vein, and venography was performed before generator replacement.

Results: Venous obstruction was defined as a luminal diameter narrowing of > 75%. Venography showed the venous obstruction in 26 (26.0%) patients. We focused on a collateral superficial vein across a clavicle, because main routes of collateral circulation were through jugular veins. Of 100 patients, 42 (42.0%) had the superficial vein across the clavicle. Sensitivity of the presence of the superficial vein across the clavicle in the diagnosis of the venous obstruction was 96.2% and specificity was 77.0% (p<0.001).

Conclusions: The presence of the superficial vein across the clavicle is useful for the prediction of the venous obstruction in patients with transvenous permanent device.