Central venous catheter (CVC) placement, even if performed under duplex scan control, may be associated with incidental arterial injury leading to increased morbidity, mortality, and prolonged hospital stay. Erroneous CVC placement in the carotid or subclavian arteries has been usually treated surgically because those puncture sites may not be efficaciously compressed manually. However, surgery in this setting may be challenging because of difficulty of access for the catheters positioned in the subclavian artery and of the risk of cerebrovascular complications for carotid catheters. Recently, several cases have been published, describing the successful endovascular management of iatrogenic arterial injury using different types of vascular closure devices (VCD). However, in this setting, it remains difficult to be completely sure that the VCD has achieved complete hemostasis and that the patient does not subsequently incur in a clinically silent intrathoracic bleeding. We report the case of an erroneous CVC placement in the right subclavian artery successfully retrieved using an Angioseal VCD. The immediate and complete hemostasis at the puncture site was confirmed at angiography.