VASCULAR CLOSURE DEVICE FAILURE AND VASCULAR COMPLICATIONS IN CONTEMPORARY PRACTICE

i2 Oral Contributions
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Background: The frequency and consequence of failure of different VCDs in patients undergoing PCI is not well defined.

Methods: From a de-identified dataset provided by the MA Department of Public Health, 23829 consecutive patients who received either a collagen-plug based (Angioseal, n=18545) or a nitinol clip-based (StarClose, n=2285) or a suture-based (Perclose, n=2999) VCD during PCI between 06/2005 and 12/2007 were selected. VCD failure was defined as unsuccessful deployment or failure to achieve hemostasis. Major vascular complication was defined as any retroperitoneal hemorrhage, limb ischemia, or need for surgical repair. Minor vascular complication was defined as any groin bleeding, hematoma (≥5 cm), pseudoaneurysm, or AV fistula. ‘Any’ vascular complication was defined as either a major or minor vascular complication.

Results: VCD failed in 782 (3.3%) patients. The VCD failure group had a significantly increased risk of any (7.7% vs. 2.8%), major (3.3% vs. 0.8%) or minor (5.8% vs. 2.1%) vascular complications compared with the group with successful deployment of the VCD (Figure). VCD failure rates were dependent upon the type of VCD (Angioseal, 2.1%; StarClose, 9.5%; Perclose, 6.2%). The Angioseal and StarClose VCD failure resulted in significantly increased vascular complications compared with successful deployment of the respective VCD.

Conclusion: In contemporary practice, VCD failure is rare. VCD failure rates and subsequent vascular complications depend upon the type of VCD used.