Pain at the puncture site and back pain in patients undergoing electrophysiology procedures with venous access site closure utilizing vascular closure device vs manual compression

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Introduction: Manual compression (MC), widely used to achieve venous access-site hemostasis, needs sustained pressure over the site and prolonged immobilization that could lead to pain at the puncture site and back pain. Vascular closure devices (VCD), on the contrary, reportedly require shorter time to hemostasis without any need for application of pressure. We evaluated the rate of back pain and pain at the puncture site as well as the frequency of pain-medication use in patients undergoing electrophysiology (EP) procedures utilizing MC vs VCD.

Methods: We retrospectively analyzed 803 consecutive patients undergoing EP procedures at multiple centers. Based on the methods used to achieve hemostasis, patients were classified into, group 1: VCD (n=304) and group 2: MC (n=499). VCD device was deployed under fluoroscopic guidance and included 2-4 minutes of gentle compression followed by 2 hours of mandatory bedrest. In the MC group, at least 10 minutes of sustained pressure followed by a pressure bandage and strict bedrest for 4-6 hours was implemented to attain hemostasis. Presence or absence of pain was determined as the following; having moderate-severe pain with or without the use of pain medication was interpreted as ‘yes’ and having no pain or minimal pain without the need for pain medication as ‘no’.

Result: Baseline characteristics were comparable among the groups. Eight (1.6%) and 6 (2%) patients from the MC and VCD group respectively experienced pain at the puncture-site (p=0.7). Out of those, no patients in the VCD group and 7 (1.4%) in the MC group required pain medications (p= 0.047). Back pain was reported in significantly higher number of patients in the MC group that necessitated use of pain medications (239/499 (47.9%) versus 74/304 (24.3%), p<0.001).

Conclusion: We observed significantly higher number of cases with back pain and use of pain medications in the manual compression group compared to the population using vascular closure device for venous access-site closure.