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Improvising Wet-Cupping Therapy for the Management of Severe Forearm Hematoma Following Transradial Percutaneous Coronary Intervention in a Geriatric Patient

CASE REPORT

INTRODUCTION

Access site complications, such as hematoma, are less frequent with transradial cardiac catheterization when compared to transfemoral procedures.[1] Significant forearm hematoma is seen in approximately 0.3%-0.7% of cases.[1,2] Evacuation of a severe hematoma is usually performed via surgical exploration since it is resistant to aspiration due to clot formation.[3] However, this procedure might have devastating consequences for an elderly patient suffering from acute myocardial infarction. We adapted the wet-cupping suction technique to evacuate severe hematoma safely.

CASE REPORT

An 86-year-old lady with acute inferior myocardial infarction (MI) was accepted to the cath lab for primary percutaneous coronary intervention (PCI). The procedure was performed via the left radial artery using a 6F sheath (Radifocus® Introducer sheath, Terumo, Japan) and a 6F Judkins right 3.5 guiding catheter (Launcher; Medtronic, Minneapolis, MN, USA). Her radial artery was tortuous howbeit; no complications were visible during the last check with 2 mL of radio-opaque agent at the end of the procedure. A radial artery compression device (TR Band®, Terumo, Japan) was applied to the wrist following the procedure. A subcutaneous hematoma around the entry point was prominent about 15 minutes later. A second TR band, placed more proximally, and an upper-arm sphygmomanometer cuff did not help to control the hematoma enlargement. At the end of 2 hours, the hematoma extended to grade IV, which caused severe pain and joint movement restriction in the hand. Although a surgical decompression was an option, age, recent MI, and dual-antiplatelet-therapy were the main issues. Therefore, we decided to perform mechanical suction with cupping. Three suction cups were placed over small incisions made on the skin with the tip of a number 11 scalpel blade. Approximately 190 mL of blood was evacuated (Figure 1). The patient's symptoms were relieved shortly after the blood suction.

DISCUSSION

This is the first reported case of wet-cupping treatment adapted for evacuating grade 4 forearm hematoma. Transradial access-related forearm hematomas are graded according to the extent of the hematoma (Figure 2). Grades III and IV are related to intramuscular bleeding and have the risk of advancing to compartment syndrome (CS).[4] Discontinuation of intravenous anticoagulant therapy, blood pressure control, and transient external compression with a blood pressure cuff are the main measures to prevent the CS.[5] Compartment syndrome of the forearm caused by transradial catheterization is a rarely reported limb-threatening complication with an incidence of 0.004%-0.4% in different studies.[6] Surgery with urgent decompressive fasciotomy under general anesthesia is the main treatment.[7] Compartment syndrome is preventable with timely measures taken as soon as significant subcutaneous bleeding is noticed.[5] Therefore, it is important

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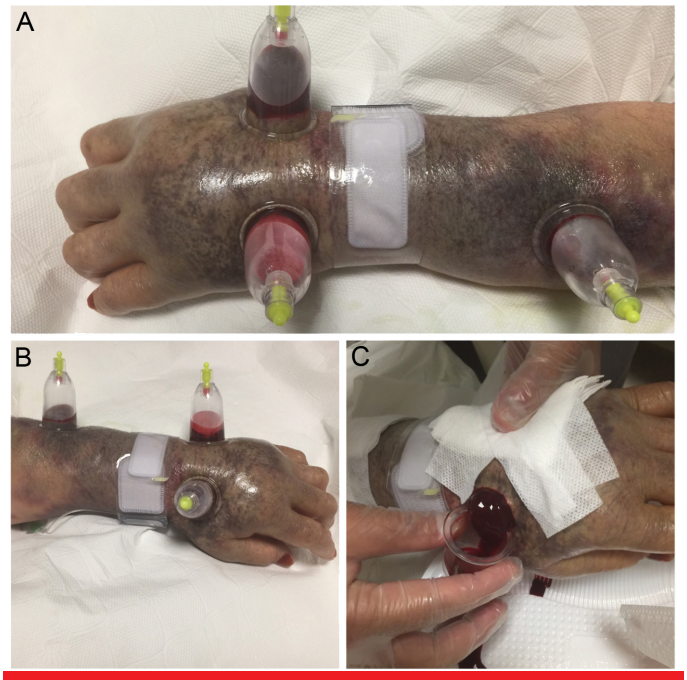

Figure 1. Evacuation of hematoma by wet-cupping. (A) and (B) are showing the placement of the cups and (C) presents the suction of the clot.

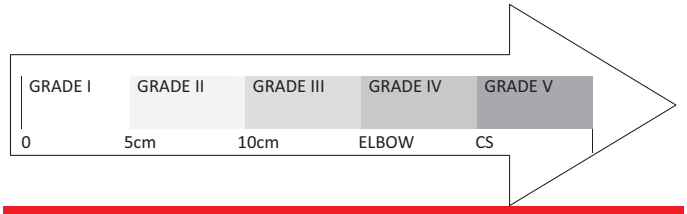

Figure 2. Grades of forearm hematoma. CS, compartment syndrome.

to take the necessary precautions when there is grade III or grade IV hematoma in order to prevent worsening of the situation into CS.

The present case was an 86-year-old female with acute inferior MI. Upon consultation with the vascular surgeon, the case was accepted as having high risk for possible surgery. Since there was an urgent need for a non-surgical technique to evacuate subcutaneous blood causing tension, severe pain, and finger movement limitation, we adapted wet-cupping for a purpose other than its regular use. Cupping is believed to have some systemic effects; however, there is still controversy about the results of the studies on wet cupping therapy due to the high risk of bias and as the mechanism of action is not very clear.[8] The skin is pulled up into the suction

Figure 3. Stages of the healing. (A) day 0; (B) day 1; (C) day 3, and (D) day 30.

cup with negative pressure in dry cupping and the suction of blood into the cups through small incisions is added to the procedure in wet cupping.[9] The cups are kept in place for approximately 10 minutes.[8] In our case, the cups with negative pressure placed over the small incisions on the target area effectively evacuated approximately 190 mL of blood and released the tension. Besides preventing more complex scenarios such as CS and skin necrosis, decreasing the blood under the skin probably contributed positively to the recovery process (Figure 3).

CONCLUSION

In conclusion, wet cupping is a potentially safe, easily applicable, cheap, and minimally invasive solution without necessitating surgical skills in the case of a severe subcutaneous hematoma, especially when antithrombotic treatment is indispensable in a very high-risk patient.

Informed Consent: Written informed consent was obtained from the patient.

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