

Rumpel-Leede Phenomenon

Acute Dermal Capillary Rupture Complicating Radial Artery Cannulation



Maneesh Sud, MD, Mina Madan, MD, MHS

A 65-year-old woman underwent double-vessel percutaneous coronary intervention via the right radial artery and received aspirin, ticagrelor (180 mg), and unfractionated heparin. Patent hemostasis was achieved with the Bengal Radial Compression Band, and the patient was transitioned to clopidogrel (300 mg). Before release of the radial band, she developed right forearm pain and swelling suggestive of local hematoma. A blood pressure (BP) cuff was applied over the forearm cycling between 5 min of compression at 20 mm Hg subsystolic pressure and 5 min of rest. Swelling and pain improved, but

the patient developed a well-demarcated petechial rash on the dorsum of the right hand originating distal to the radial band (Figure 1A). Neurovascular status of the hand remained intact. The platelet count was $172 \times 10^9/l$. The band was removed. No further forearm hematoma or rash was noted. She was discharged the next day on aspirin and clopidogrel. The rash resolved after 8 days (Figure 1B).

Rumpel-Leede phenomenon is an acute dermal capillary rupture first described after releasing pressure applied by a tourniquet over the arm in patients with scarlet fever and is indicative of

FIGURE 1 Acute Dermal Capillary Rupture of the Right Hand



(A) Petechial rash on the dorsum of the right hand after hemostasis. (B) Resolution of petechiae 3 weeks later.

From the Schulich Heart Centre, Sunnybrook Health Sciences Centre, University of Toronto, Toronto, Ontario, Canada. Both authors have reported that they have no relationships relevant to the contents of this paper to disclose.

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coagulopathy or capillary fragility (1). More recently, it has been described with noninvasive BP monitors (2) and hand restraints (3) and is used to confirm capillary fragility in Dengue fever (4). Anecdotally, there are reports mentioning “hand cuff injury” complicating radial artery access (5). We surmise that capillary rupture was due to elevated venous pressures caused by the additive effects of the radial band and BP cuff applied in series over the limb in the context of platelet inhibition and anti-coagulation. Had this solely been a result of the BP

cuff, we would have anticipated petechiae originating distal to the cuff, not the band. Importantly, the petechiae resolved with conservative measures and did not require cessation of antiplatelet therapy.

ADDRESS FOR CORRESPONDENCE: Dr. Mina Madan, Sunnybrook Health Sciences Centre, 2075 Bayview Avenue, Room D3 80, Toronto, Ontario M4N 3M5, Canada. E-mail: mina.madan@sunnybrook.ca.

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