

## A Novel Approach to Percutaneous Brachial Artery Access Hemostasis

An overview of how to use the Terumo Band radial compression device during brachial access.

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**P**ercutaneous brachial artery access (PBA) for coronary and iliac peripheral interventions is beginning to be seen more frequently in interventional cardiology. One of the existing hurdles to clinicians widely adopting this technique in the United States is the achievement of secure hemostasis after removal of the brachial sheath. Although manual compression is the gold standard for PBA hemostasis, there are inherent challenges with maintaining good focal compression on the artery by a hand grip with limited use of supportive body weight. The brachial artery has a tendency to roll from beneath the interventionist's fingers during holding pressure, making initial hemostasis challenging. Furthermore, delayed development of hematoma or pseudoaneurysm is common. Although there have been case reports on the use of vascular closure devices on the brachial artery, this is not routinely performed or recommended. In this article, we report on the method of using the TR Band radial compression device (Terumo Interventional Systems, Somerset, NJ) in the brachial position as an alternative to manual compression (Figure 1).

In the standard fashion of placement, a large (29 cm) TR Band is placed in the brachial position (Figure 2). An arm board is put under the patient's elbow to keep it straight, and the green marker is aligned just proximal to the skin puncture site (Figure 3). If the arm girth allows, fasten the strap in a parallel and not slanted fashion. At this time, a piece of silk tape is used on the back of the TR Band covering the band on both sides of the fastened strap to ensure secure placement (Figure 4). We have observed that the silk tape forms a very strong bond with the TR Band material, which is very difficult to separate once applied. This allows for additional security in maintaining adequate pressure when the compression balloon is inflated. We have used this method even when the fastening straps did not meet due to large arm size. Once in place, 18 to 20 mL of air is injected using the TR Band inflator, and the sheath is pulled out. On rare occasions, 2 to 3 mL of additional air inflation is needed to achieve hemostasis. The radial pulse is palpated to ensure blood flow to the hand. The duration of the compression is dictated by the presence or absence of anticoagulation.

Typically, in interventional cases, the band is loosened by removing 5 mL of air at 4 hours and is deflated completely 1 hour later. However, it is often left in place for another hour in case of breakthrough bleeding and the need for



Figure 1. TR Band radial compression device.



Figure 2. Right brachial placement of the TR Band.

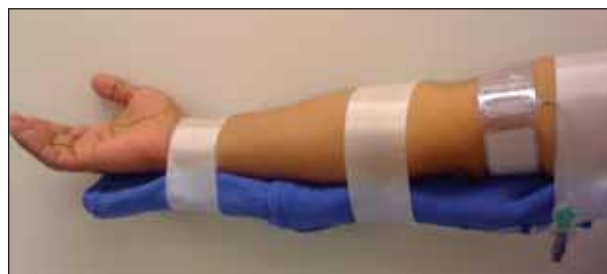


Figure 3. Right brachial placement of the TR Band using an arm board.



**Figure 4. Right brachial placement of the TR Band with precautionary placement of silk tape.**

immediate reinflation. We leave the arm board in place overnight to keep the elbow straight and remove it after inspection the next morning.

Safe removal of a PBA sheath is challenging. In our experience from May 2008 to November 2009, a total of 25 PBA TR Band closures were performed with no complications, including no significant hematomas or thrombosis. The mean body mass index of these patients was 30.2 (range, 17.6–42). The completion of a brachial access case can be safely achieved by using the TR Band with only slight modifications. Given its ease of use and our clinical success, this has become our first-choice method for PBA hemostasis. ■

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## LETTERS

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Clinical studies have demonstrated that cardiologists can reduce disparities in care by adhering to proven guidelines without regard to gender, race, or ethnicity. Recent research from the Registry to Improve the Use of Evidence-Based Heart Failure Therapies in the Outpatient Setting (IMPROVE HF) study presented at the American College of Cardiology's 2010 annual meeting showed that cardiology practices significantly increased the quality of care for heart failure patients equally for men and women when they monitored care and applied a practice-specific performance improvement system to better meet guideline recommendations.

By adhering to the guidelines, we can change the fact that more women die of cardiovascular disease than men, yet women receive only 33% of angioplasties, stents, and bypass surgeries, and that African Americans are 13% less likely to have coronary angioplasty than whites.

To change these statistics, the Association of Black Cardiologists (ABC) has launched the Every Patient First Challenge—a new effort aimed at diminishing health disparities. This new initiative is funded through a grant from Medtronic's Every Patient First health equity program designed to eliminate health care disparities at the point of care.

The Every Patient First Challenge is designed to improve the overall quality of cardiac care while identifying and addressing racial, ethnic, and gender disparities. This initiative consists of three distinct phases to assess progress in eliminating disparities: baseline assessment, intervention, and postintervention assessment. To ensure the latest evidence-based cardiovascular care guidelines are followed when treating all patients, ABC will provide participating cardiology practices with protocols and tools to increase guideline adherence. ABC has begun identifying geographically diverse sites around the country to participate in the Challenge.

While this is a good first step in reducing health disparities, it is only a small drop in a very large bucket that will soon be overflowing. With the recent passage of health care reform, 32 million new people will flood the health care system, and we fear that these patients will further exacerbate existing disparities. To prevent this from occurring, we are encouraging all cardiologists to take action now by adhering to evidence-based guidelines when determining treatment decisions in interventional cardiology.

It is through action that we will eliminate health disparities and allow cardiovascular care to be provided in an equitable manner, regardless of one's age, gender, race, ethnicity, or primary language. For more information about the Every Patient First Challenge, I encourage you to visit [www.abccardio.org](http://www.abccardio.org), or call Andre Williams at (202) 375-6524. ■

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