

Mechanical Compression – Radial Artery Hemostasis

Impact of two Different Hemostatic Devices on Radial Artery Outcomes after Transradial Catheterization

- Pancholy S

Journal of Invasive Cardiology 2009; 21:101-104

This 500-patient prospective study evaluated the impact of two different hemostatic devices on radial artery outcomes following transradial artery catheterization. All procedures were diagnostic angiographies using 4 Fr catheters through 5 Fr sheaths.

Patients segregated into a Group 1 received HemoBand as the post-catheterization hemostatic device; patients in a Group 2 received the Terumo TR-Band as the hemostatic device. Radial artery patency was studied using Barbeau's test at time of hemostatic device application, and at 30 minutes, 60 minutes, 24 hours and 30 days following such application.

Both devices were equally effective in achieving hemostasis, however, patients in Group 1 (HemoBand), had a higher incidence of radial artery occlusion at 24 hours and at 30 days than patients in Group 2 (TR-Band). At 30 days, radial artery occlusion was 56% less in Group 2 (TR-Band) than in Group 1. Significant bleeding complications were not observed in either group. The authors comment that "all TR-Bands [in the study] appear to lose pressure over the first 60 minutes after application" and that this is related to the re-established patent blood flow in the artery during the hemostasis period. In comparison, the HemoBands occlude the radial artery completely during the entire period of their application. Since occlusive radial artery compression increases risk of subsequent chronic radial artery occlusion, the TR-Band's "patency during hemostasis" is a strong predictor of post-procedure radial artery patency.

Prevention of Radial Artery Occlusion-Patent Hemostasis Evaluation Trial (PROPHET Study): A Randomized Comparison of Traditional Versus Patency Documented Hemostasis After Transradial Catheterization

- Pancholy S, Coppola J, Patel T, Roke-Thomas M

Catheterization and Cardiovascular Interventions 2009; 72:335-340

This prospective 436-patient study evaluated the efficacy of "hemostasis with patency" for avoiding radial artery occlusion following transradial catheterization. Patients were randomized to: a Group 1, which received conventional compression for post-procedure hemostasis; and, a Group 2, which received compression with observed patency during such compression. All patients' distal radial flow was assessed during the hemostasis period, and at 24 hours and 30 days following the procedure. Group 1 patients that had no patent radial artery flow during hemostasis were termed "occlusive hold".

It was found that persistent radial artery occlusion in Group 2 was 59% less at 24 hours and 75% less at 30 days compared to Group 1. A significant association between "occlusive hold" and radial artery occlusions at 30 days was also found. A further analysis of Group 1 outcomes showed that of the patients with patent radial arteries at 30 days, over 99% had patent radial flow during hemostatic compression.

The study concludes that "Patent hemostasis is highly effective in reducing radial artery occlusion after radial access and guided compression should be performed to maintain radial artery patency at the time of hemostasis, to prevent future radial artery occlusion."

Interview with Samir B. Pancholy, MD, FACC, FSCAI

- Cohen B

ANGIOPLASTY.ORG Interview Series: Transradial Approach; August, 2008

(WWW.PTCA.ORG/RADIAL/INTERVIEW_SAMIR_PANCHOLY.HTML)

In this interview, Samir Pancholy, MD, FACC, FSCAI discusses his findings regarding prevention of radial artery occlusion. As one of the few complications associated with transradial catheterization, persistent radial artery occlusions preclude re-use of the radial approach and possible future use of the radial artery as a bypass graft. Dr. Pancholy discovered that thrombus formation is an important contributor to development of these occlusions and that establishing constant blood flow through the artery helps prevent a thrombus from propagating. He has further suggested that "patent hemostasis", a technique which provides distal blood flow during hemostasis, is effective in reducing post-procedure radial artery occlusion.



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Mechanical Compression – Radial Artery Hemostasis (continued)

Dr. Pancholy concludes that occlusive compression of the radial artery for too long a period increases risk of persistent radial artery occlusion. He suggests that “patency is a very big necessity when you are obtaining hemostasis after a transradial procedure”.

Transradial Access in an Occluded Radial Artery: New Technique

- Pancholy S

Journal of Invasive Cardiology (2007)19;12:541-544

In this article, Dr. Pancholy describes: i) a technique for accessing an occluded radial artery and ii) histologic findings suggesting a cause of persistently occluded radial arteries. This article is the first to identify thrombus formation as a cause of early radial artery occlusion, and the surprising rapidity with which the thrombus organizes so as to form a “plug” that blocks distal blood flow.



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