

An Unusual Case of Groin Discomfort

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Groin complications after cardiac catheterizations are common. With the increasing use of mechanical hemostatic devices, cardiologists must be alert to a wide array of potential problems. We report an unusual complication after the use of a closure device. *Cathet Cardiovasc Intervent* 2001;52:484–485. © 2001 Wiley-Liss, Inc.

Key words: collagen; hemostasis; cardiac catheterization

A 51 year-old African-American woman with a complex medical history including mixed connective tissue disorder, sarcoidosis, and obstructive sleep apnea underwent evaluation for lung transplantation. Right and left heart catheterizations were performed through the right femoral artery and vein. She had angiographically normal coronary arteries and preserved left ventricular systolic function. The aortic valve had moderate stenosis with an area of 1.3 cm². The pulmonary artery pressure was mildly elevated. At the end of the procedure a VasoSeal (Datascope Corp., Montvale, NJ) closure device was applied to the femoral artery for hemostasis (Fig. 1).

Fifteen months later the patient was readmitted to the hospital because of increasing dyspnea. A transthoracic echocardiogram revealed an aortic valve area of 1.2 cm² but was otherwise unremarkable. Her dyspnea was suspected to be multifactorial in origin and resolved with steroids. During the hospitalization the patient reported that she had experienced discomfort in her right groin since cardiac catheterization. On examination there was an easily palpable, superficial, firm, mobile, non-pulsatile tubular mass in the right groin. There was no tenderness, erythema, warmth, or fluctuance. The right femoral artery pulse was strong and without bruit. The patient reported that her groin bothered her when she wore tight pants or sat in particular positions. An ultrasound of the right groin revealed a foreign body in the subcutaneous tissue not involving the femoral vasculature.

Vascular surgery was consulted to explore the groin. This was performed at the bedside with a local anesthetic. A VasoSeal sheath was found in the subcutaneous tissue (Fig. 2) and was easily removed (Fig. 3). The patient had no serious problems from the retained sheath and was subsequently discharged home.

Manual compression and mechanical tools such as C-clamps and pneumatic compression devices are effective at achieving hemostasis at arterial puncture sites. However, they typically require thirteen to sixteen minutes of compression to achieve hemostasis and necessitate four to twelve hours of bed rest [1]. Such factors may lead to patient dissatisfaction and, in the case of outpatients, delay discharge. In an attempt to improve patient

care, various hemostatic devices have been developed. They are generally effective and may result in quicker hemostasis. Consequently, bed rest duration may be significantly reduced, early ambulation may be possible, and patient satisfaction may be increased. These hemostatic devices are considered to be safe in experienced hands. Nevertheless, major complication (surgery, transfusion, infection) rates have been estimated between 2.5–5% in various studies of these devices. [2–4]

VasoSeal is a commonly used closure device known to be very effective at achieving hemostasis [5–8]. With this tool, a collagen plug is inserted adjacent to the arterial puncture site, followed by a second collagen plug more superficially in the soft tissue in order to prevent epidermal oozing. In our patient, we suspect that with insertion of the second collagen plug, the VasoSeal sheath was torn at the neck of the device and then mistakenly left in the soft tissue.

The FDA has approved three hemostatic devices: VasoSeal, Angio-Seal (Quinton Instrument Co., Bothell, WA and Sherwood Davis & Geck, St. Louis, MO), and Perclose Techstar and Prostar (Perclose Inc., Redwood City, CA). Each of these instruments is effective for hemostasis after femoral arterial procedures. They can shorten the duration of bed rest, hasten ambulation, and make such procedures more amenable to be performed in the outpatient setting. However, they each are associated with specific complications, and use of these devices dictates that cardiologists be alert to any potential problems. Reported complications include device malfunction, infection, arterial obstruction, hematoma, and pseudoaneurysm formation [9].

Our patient experienced an unusual complication with a hemostatic device. Her discomfort resolved with re-

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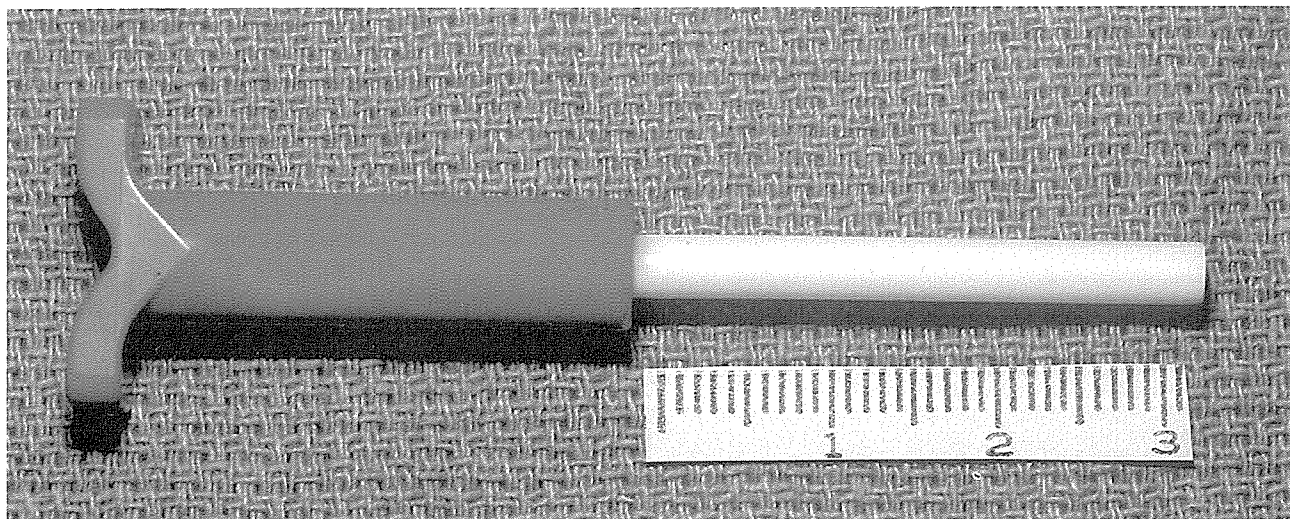


Fig. 1. VasoSeal sheath.

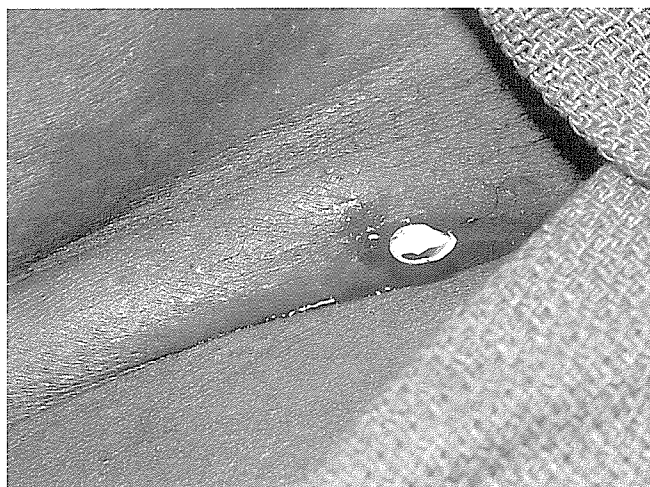


Fig. 2. VasoSeal sheath retained in soft tissue.

removal of the retained sheath. Cardiologists should be attentive to any complications that may occur with the increased use of mechanical closure devices.

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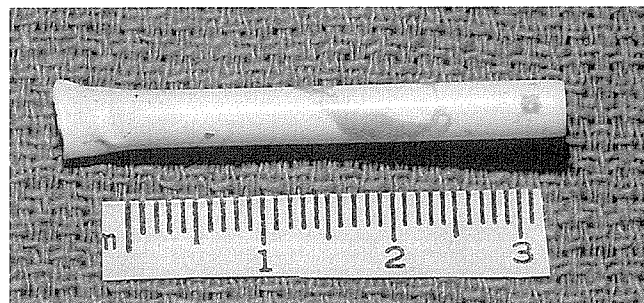


Fig. 3. VasoSeal sheath after removal.

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