Securing Drains with a Subcutaneous Anchor: A Case Report

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Introduction

Drains are a necessary part of successfully evacuating abscesses. However, securing drainage devices in optimal locations has been a challenge for decades. The most common complication is migration or dislodgement of the device from the target location.[1-3] Unlike bed-ridden patients, those engaged in the activities of daily living are even less likely to successfully manage a drain.

In an article discussing abdominal abscess drainage the data supports an increase in radiologists placing drains. The key to successful completion of the drainage is securing the catheter in the optimal location.[3] This case study is an example of a novel effective device that challenges the long traditional catheter securing methods consisting of sutures and adhesives.

Case Report

A 50-year-old obese white female presents, status post laparotomy with a subsequent infection in an abdominal midline incision and an infraumbilical abscess. A 5F (1.7mm) valved hydrophilic centesis catheter, 10cm in length, was inserted trocar style into the abscess using ultrasound guidance and secured to the patient's panniculus adiposis (pannus), **see figure 1.** A 5F Subcutaneous Anchor Securement System (SASS) was placed to secure the catheter.[4] A Jackson-Pratt (JP) drain was engaged, and luer locked to the catheter, **see figure 2.** Gauze and foam-based adhesives were applied to the area for potential seepage, wound hygiene, and secondary catheter stabilization.

The drain was clinically required for 3 weeks. The abscess was evacuated completely. The patient was the only individual responsible for the care and maintenance of the drain. The dressing material used was gauze and silk tape over the drain insertion site. The patient had no daily care regimen or homecare assistance. Dressings over the midline incision and the drain were changed as the patient felt it was needed. Despite the lack of oversight and consistent care the SASS remained anchored in place until the centesis catheter was removed. **Figure 3** shows the drainage site immediately following the SASS base removal. In **figure 4**, the removal process of the SASS is depicted.

The activity and stress on the drainage system can be seen in **figure 5** as evidenced by the multiple kinks in the removed centesis catheter. Securing the catheter in place with SASS allowed the successful utilization of the drainage system.

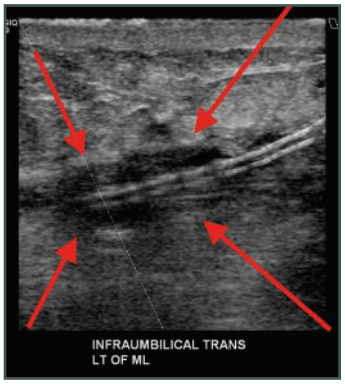

Figure 1.
Ultrasound image of 5F centesis catheter within the abscess.

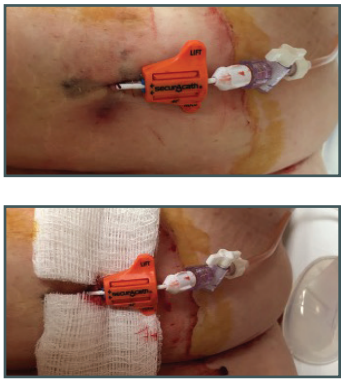

Figure 2
5Fr Centesis Catheter with 5Fr Subcutaneous Anchor Securement System

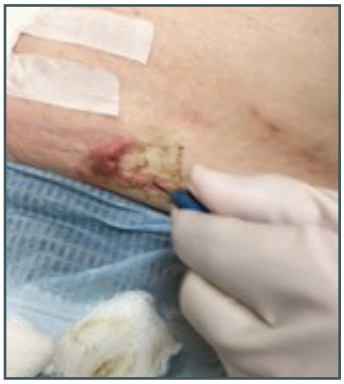

Figure 3
Removal of the SASS base.

Figure 5
Kinks observed in catheter after removal.

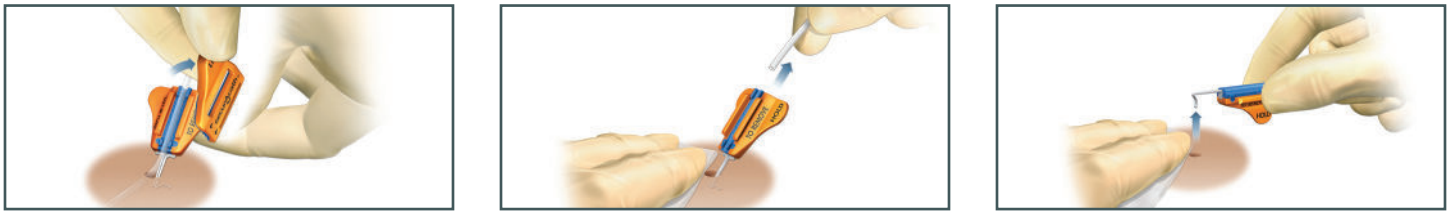

Figure 4
Removal of the Subcutaneous Anchor Securement System

Discussion

Securing various drains with improvised suturing techniques has been the hallmark of Interventional Radiologists and Surgeons for decades.[2] Sutures, which have never been FDA approved for external device retention, have several limitations including Centers for Disease Control (CDC) recommended avoidance.[5] Sutures have long been the nidus for infection, variable reliability and poor cosmesis- including scarring.[5] Employing a device, SASS, that's sole engineered function is to secure vascular, drainage and other non-vascular access catheters appears to offer a superior option to suturing.[4,5]

Introduced to the United States in 2012, SASS was initially approved for vascular catheters. Since then, it has accumulated an abundance of scientific evidence demonstrating clear superiority in securing vascular access catheters.[4,6-9] Many studies on SASS for drainage catheters and chest-tubes are beginning to be published and many more are being conducted. [10-11] This off-label case study performed in July 2017 was the first use of the SASS on a drainage catheter in the United States. As of July 9th, 2019, short or long-term securement of percutaneous indwelling catheters for abscess or general drainage was added to the indications for use by the FDA.[12] More studies on the potential superiority of SASS as compared to a variety of suture techniques are needed to improve outcomes for patients.

Ethical Approval

The patient gave her written informed consent to treat. No image in this publication can identify the specific patient.

Conflicts of Interest

Dr. Symington is an investor in SecurAcath and its Medical Director.

Dr. Hawes is an independent contractor assisting with research at Interrad Medical, Inc.

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