

Efficacy and Safety of LockeT in Large-Bore Access Electrophysiological Procedures

Karnik Patel, Ashish Katapadi, Eli Herink, Nikhila Chelikam, Ayesha Arab, Peter Park, Jalaj Garg, Rajesh Kabra, Naga Venkata Pothineni, Douglas Darden, Madison Spence, Rajesh Gopinathannair, Donita Atkins, Dhanunjaya Lakkireddy
Overland Park Regional Medical Center, Kansas City, Missouri



Background

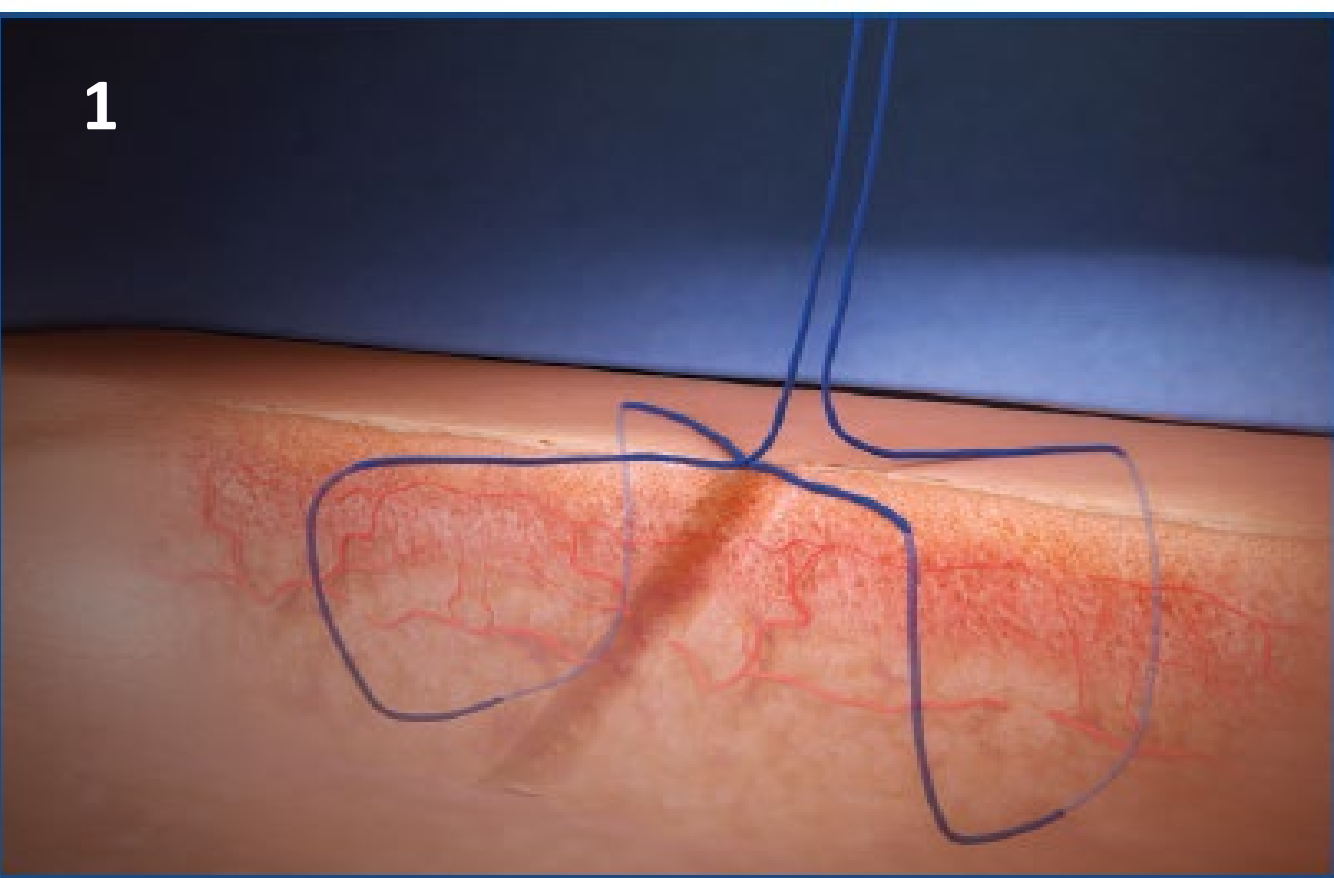
Achieving reliable vascular hemostasis in large-bore vascular access (LBVA) electrophysiological (EP) procedures is challenging. Traditional vascular closure devices, while effective, may pose safety concerns. LockeT, a novel external compression device combining manual compression with the figure-of-eight suture technique, may provide an alternative solution.

Objective

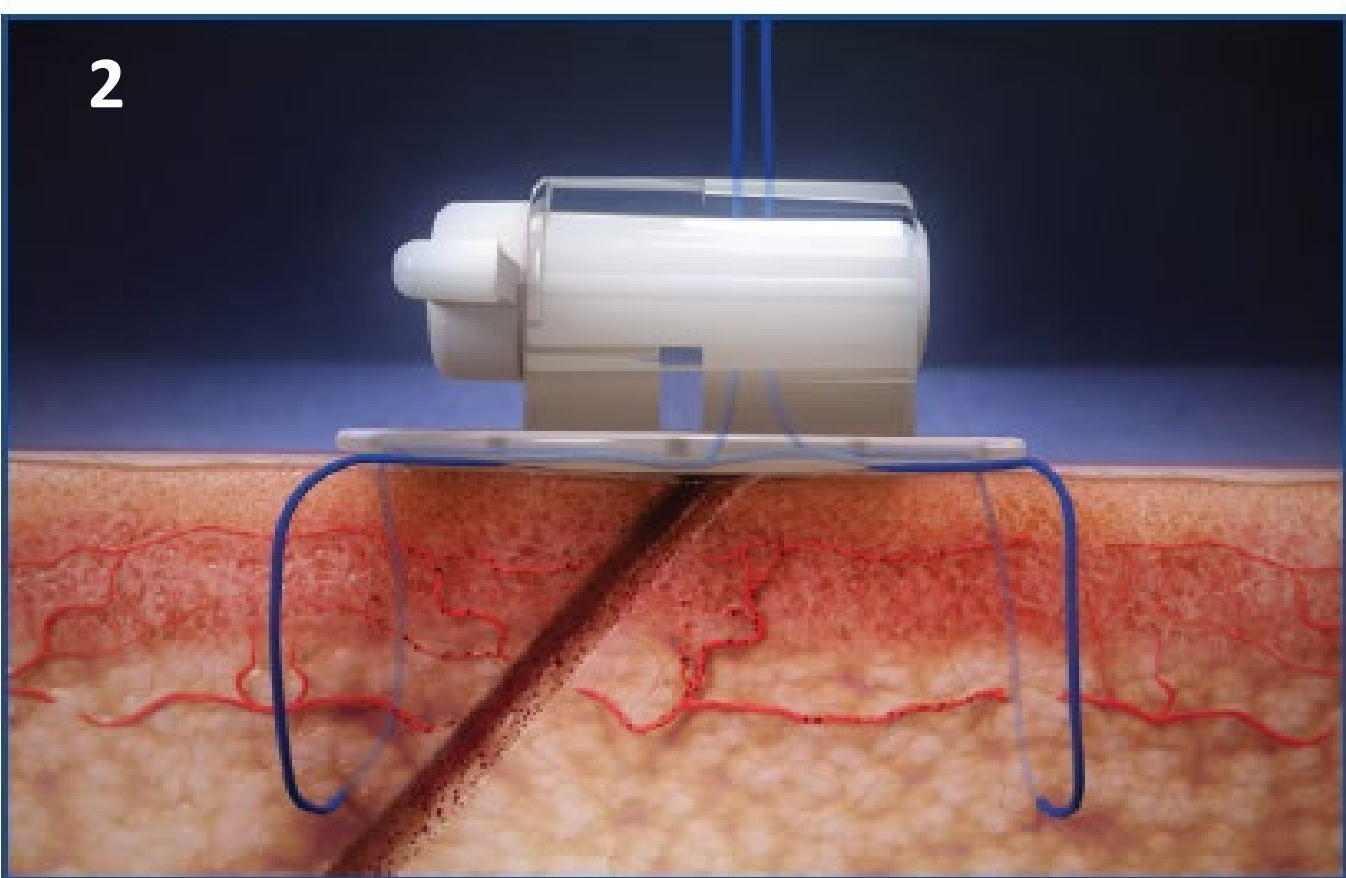
Evaluate the efficacy and safety of LockeT in achieving vascular closure in LBVA EP procedures.

Method

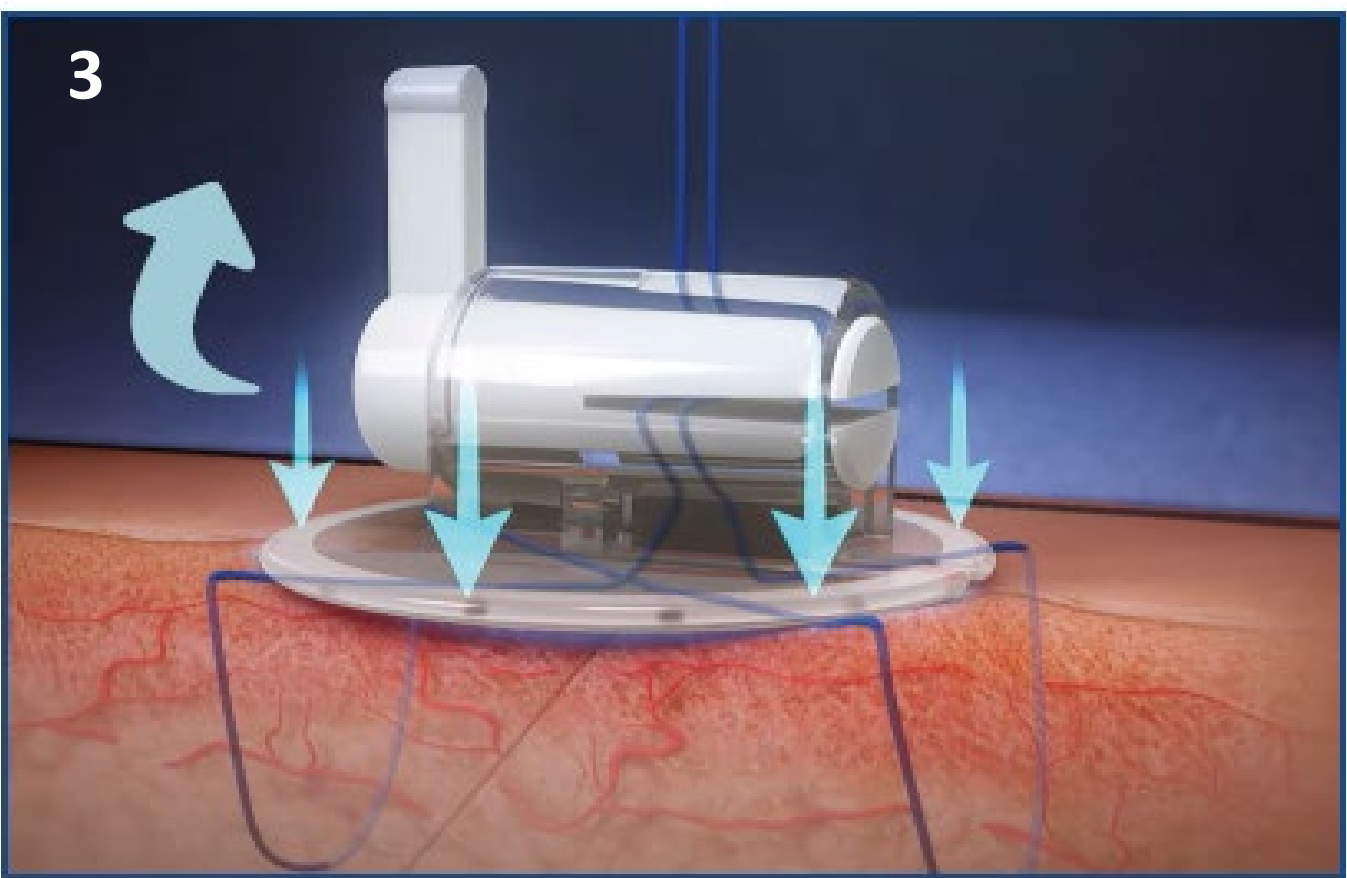
This retrospective, single-center study analysed 139 patients undergoing LBVA (>13 Fr) procedures, including left atrial appendage occlusion, cardiovascular implantable electronic device implantation, and pulsed-field ablation. Primary outcomes included access site complications, length of stay (LOS), time to ambulation (TTA), hemostasis achievement at 2 hours (HA2H), time to hemostasis (TTH) and same-day discharge (SDD) rates. TTA is defined from the end of procedure to first assisted or independent ambulation out of bed. TTH is defined as time from sheath or last in-vivo device pull/removal to LockeT use. Major complications included any major clinical bleeding requiring transfusion, critical limb ischemia, or surgical requirement. Figure 1 shows the application and removal of the LockeT Device.



Step 1: Create standard figure of eight suture



Step 2: Tighten and place sutures in LockeT



Step 3: Apply pressure and turn handle 90°



SCAN TO WATCH VIDEO

Results

Baseline Characteristics	
Age (yrs)	76.0 (IQR 62.0-80.0)
Male Gender	55.4% (77)
Body Mass Index (kg/m2)	28.2 (IQR 24.8-32.5)
Race	
White	88.5% (123)
Black	2.9% (4)
Hispanic	1.4% (2)
Asian	2.2% (3)
Other	5.0% (7)
Hypertension	68.3% (95)
Diabetes	22.3% (31)
Coronary Artery Disease	23.7% (33)
Congestive Heart Failure	5.8% (8)
Chronic Kidney Disease	6.5% (9)
Type of AF	
Paroxysmal	67.6% (94)
Early Persistent	7.9% (11)
Longstanding Persistent	5.8% (8)

Procedural and postprocedural characteristics	
Parameter	Value
Type of procedure:	
LAAO	82.7% (115)
Leadless PPM	17.3% (24)
Maximum sheath size:	
14Fr	82.7% (115)
18Fr	7.9% (11)
23Fr	9.4% (13)
Major Complications	0.0% (0)
Minor complications	3.6% (5)
Hemostasis at 2 hours (HA2H)	97.1% (135)
Time to ambulation (Hrs)	4.1 (IQR 3.0-5.1)
Time to Hemostasis (min)	0.2 (IQR 0.0-1.3)
Same-Day Discharge (SDD)	91.4% (127)

Conclusion

LockeT showed a strong safety profile, low complication rates, and effective hemostasis in large-bore access EP procedures. It offers a viable alternative to traditional closure devices, though larger studies are needed to confirm these findings.