

Surgical Note

Surgical Implantation of the PA-C10 TOX Device for JET™ BP Measurement

Overview

The PA-C10-TOX implantable telemetry device is a miniature blood pressure device that is implanted in the femoral groove and the attached catheter is advanced into the iliac artery or abdominal aorta. This device is used in conjunction with DSI's Jacket External Telemetry (JET™ BP).

This indwelling catheter is placed into the femoral artery, which is permanently ligated, and the pressure sensing tip is advanced upstream into the free-flowing blood of the iliac artery or abdominal aorta. Collateral circulation then provides blood flow to the limb distal to the point where the femoral artery was ligated. If permanent ligation of the femoral artery is not desirable, blood flow can be temporarily occluded, and the catheter can be introduced and sealed in place with a purse-string suture or tissue adhesive thus restoring blood flow past the catheter once the occlusion is discontinued. The procedure below will describe complete ligation of the femoral artery.

Implant Preparation

1. Without opening the sterile package, activate the implant with magnet.
2. Record the pressure offset value with the data acquisition software
3. Once a sterile field has been established, open the sterile package and hydrate the catheter with sterile saline.

Catheter Placement

1. Isolate the femoral artery in a location proximal enough where the tip of the catheter will reside in free-flowing blood once tied in place. A few drops of 2% lidocaine may be applied to the artery to prevent vasospasm during isolation.
2. Place three pieces of suture under the isolated section of the femoral artery.
3. Tie a square knot in the distal-most suture to permanently ligate the blood vessel. The middle suture can be tied in a loose knot, large enough to allow the catheter to pass as it is inserted,

and the proximal suture will be used to temporarily occlude blood flow when the artery is punctured (see Figure 1).

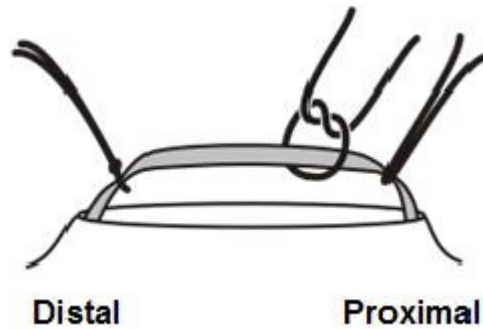


Figure 1. Preparing Artery for Catheter Placement

1. Prepare an 18 or 20g needle by bending the beveled tip (holding the bevel up) to a 90° angle (see Figure 2). This can be used to puncture the vessel and introduce the catheter.

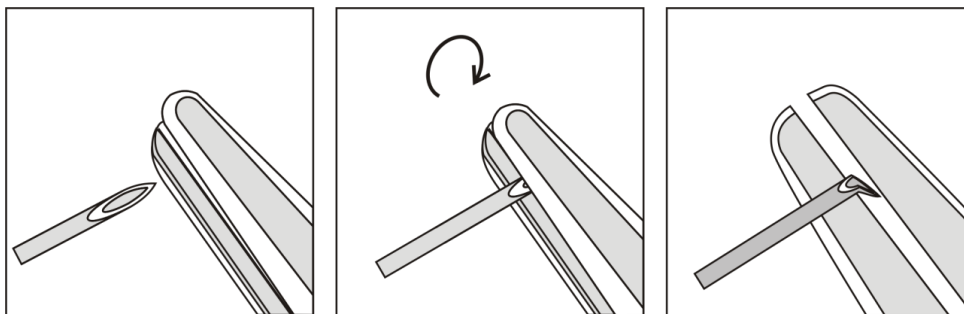


Figure 2. Bending Needle for Catheter Placement

2. Carefully remove the tip cover from the catheter and regel if there is any gel loss or air bubbles in the tip of the catheter. Information and videos regarding regelling catheters can be found in the [DSI Support Center](#).
3. While applying tension to the distal and proximal sutures, cannulate the artery and advance the catheter until it meets the proximal occlusion suture, then gently tighten the middle suture around the catheter to secure it in the vessel and prevent bleeding.
4. Release tension on the proximal occlusion suture and continue passing the catheter until the desired depth is reached.
5. Secure the proximal and middle sutures around the artery with multiple square knots.

- Bring the tails of the distal ligation suture around the catheter and secure with a combination of friction knots to prevent the catheter from backing out of the insertion point.

Device Placement

The location of device body placement will vary depending on animal anatomy and surgeon preference. The device should be tacked in place using non-absorbable braided suture on a taper needle.

- In some species, there is a naturally occurring pocket located in the femoral triangle that is typically occupied by a lymph node. Placement of the implant in this pocket allows the catheter to proceed directly into the femoral artery. Secure the implant via the suture ribs adjacent to and not directly on top of the artery location (see Figure 3).

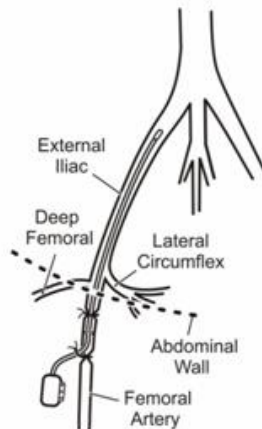


Figure 3. Catheter inserted directly into femoral artery

- Alternatively, a small intramuscular pocket can be created under sartorius muscle. The device is positioned so the catheter forms a gently “U” shape and the device tacked to the fascia of the underlying vastus medialis using the suture ribs (see Figure 4).

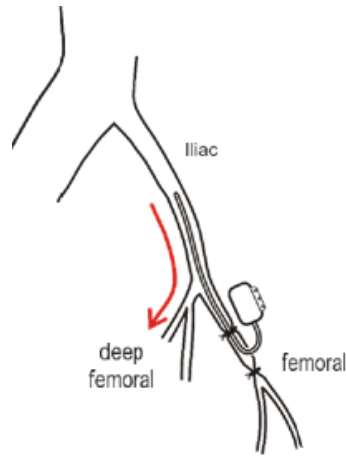


Figure 4. Catheter inserted with U-shaped bend

3. Close the device pocket with absorbable suture on a taper needle to eliminate any dead space around the device.
4. Close the overlying tissue layers ensuring the tissue lays flat over the contours of the implant.
5. An intradermal suture pattern is recommended for the skin to prevent irritation. Alternative skin closure techniques may be used at the surgeon's discretion.