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## BRIEF COMMUNICATION

# The Use of a Biopsy Punch in Surgical Preparation of Drug Self-Administering Animals

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REYNOLDS, F. A., C. L. DUVAUCHELLE AND C. KORNETSKY. *The use of a biopsy punch in surgical preparation of drug self-administering animals.* PHARMACOL BIOCHEM BEHAV 49(1) 233-234, 1994. — This report describes a simple surgical method of exiting an implanted intravenous catheter through the skin via a nonsutured site. The preparation, which makes use of a biopsy punch, avoids placing the catheter exiting point through the incision used for subcutaneously fixing the catheter platform on the back of the animal.

Drug self-administration    Jugular catheterization    IV surgery    Surgical method

WOUND infection and prolonged healing time are common problems encountered in drug self-administration procedures utilizing interscapular intravenous catheter termination. In part, these problems often are aggravated because the exit of the catheter through the skin is via the incision needed to subcutaneously place the catheter platform. The surgical method for catheter implantation described here avoids this problem by using an exit site for the catheter that does not require sutures and is separate from the incision needed to place the catheter platform.

The catheter implant used for this procedure is similar to that used by other investigators (1-4) and consists of an angled guide cannula embedded in a molded platform and is mounted on top of a 1 inch square of surgical mesh (Marlex Mesh, Bard Cardiovascular). The guide is affixed to silastic tubing (Dow-Corning), the end of which is inserted into the jugular vein. After catheterization into the jugular vein, instead of the usual sagittal incision, a 5 cm diagonal incision, starting at

midline and continued at a 45° angle caudally, is made on the animal's back. The catheter is then pulled through a subcutaneous space created which extends from the neck to the back. Hemostats are then inserted into the incision on the animal's back and held firmly in the open position just under the desired catheter top exit. This procedure keeps the skin taut allowing for a 3.5 mm biopsy punch (Premier Medical) to push a hole through the skin (see Fig. 1). Once the biopsied piece of skin is discarded, the catheter cap is removed, the threaded top of the catheter is slid through the puncture hole and the cap is screwed back on (see Fig. 2). The diagonal incision is then sutured and Betadine® solution as well as wound powder is applied to the suture area and around the cannula exit site (see Fig. 3). To further limit the chances of postoperative infection penicillin (120,000 U, IM) is given after catheter implantation. The sutures are removed in 7-8 days to prevent infection.

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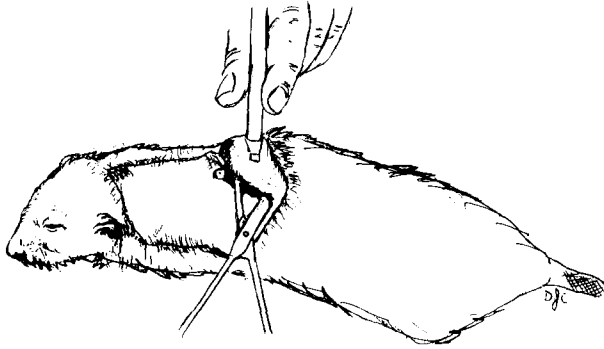


FIG. 1. Hemostats are inserted into the oblique incision, held in an open position, and pulled upwards, thus creating tension in the skin layer so that a biopsy punch can be pushed through the skin.

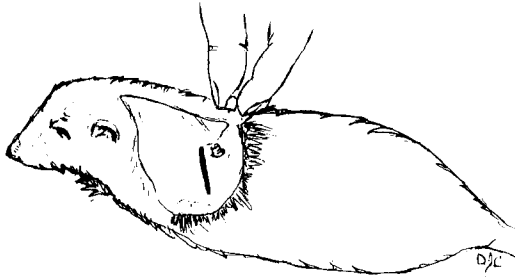


FIG. 2. After the biopsy hole is made and tissue discarded, the open end of the catheter slides through and the cap is replaced.

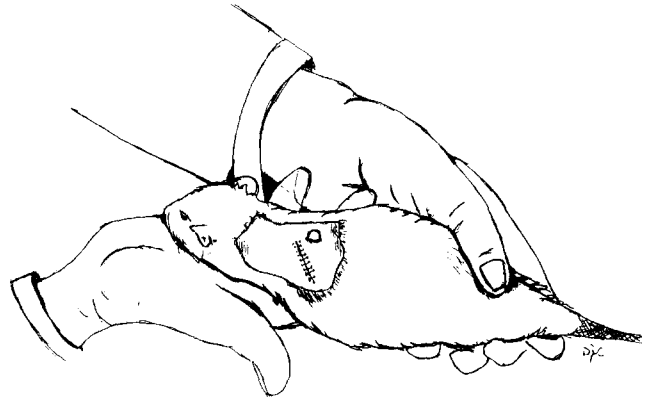


FIG. 3. The oblique incision is sutured and wound powder is applied.

The elimination of sutures directly around the catheter exit site facilitates the healing process because physical contact with the newly sutured area at the start and finish of self-administration sessions is no longer necessary. In our laboratory, this procedure has been shown to decrease irritation, infection, and infection-related problems in self-administering animals.

#### ACKNOWLEDGEMENTS

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