

Brief Communication

CHRONICAL VENOUS CATHETERIZATION FOR FREQUENT
BLOOD SAMPLING IN UNRESTRAINED PIGS

Very frequent collection of blood is necessary when endocrinological studies are performed in the porcine species. The conventional blood sampling technique by puncture of vessels (*Muirhead* 1981) cannot be considered for long term studies with frequent sampling in the pig.

Chronical catheterization of the cephalic vein in pigs has been designed and routinely used in long-lasting endocrinological studies (*Shille et al.* 1979, *Karlbom et al.* 1982). Alternative approaches for venous cannulation were tested in order to collect either peripheral blood (jugular vein) or blood from selected organs (uterine vein). Furthermore a fixation procedure was designed to avoid slipping off of the venular catheter.

Pregnant and non-pregnant gilts/sows (weight range 70 to 180 kg) were anaesthetized with Tiopentone sodium (Pentotal, Abbott) administered through a cannulated ear vein. Depending on the vein selected to be catheterized (external jugular or uterine vein) the operative area was prepared for aseptic surgery. With the animals in dorsal recumbent position, exposure of the vessels was done by blunt cervical dissection or medial laparotomy. In the case of the uterine vein, the uterine mesenteries had to be opened and the vein exposed. In all cases the perivascular fascia was cleared away. The vein was ligated distally (3—0 Vicryl, Ethicon, West Germany) and, under sufficient digital pressure applied proximally to prevent backflow, a longitudinal incision (0.5 cm) was made in the wall of the vessel. An autoclaved Silastic catheter (Dow Corning Co., Midland, Michigan, U.S.A.: 0.04 inch ID and 0.08 inch OD) of 50—100 cm length, previously flushed with saline containing 25 IU heparin per ml, was inserted into the vein for a suitable distance (between 10—20 cm). To ensure proper fixation of the catheter to the vein, a single ring (2—3 mm width) of Silastic tubing (0.06 inch ID and 0.1 inch OD) was placed over the catheter at the point where it

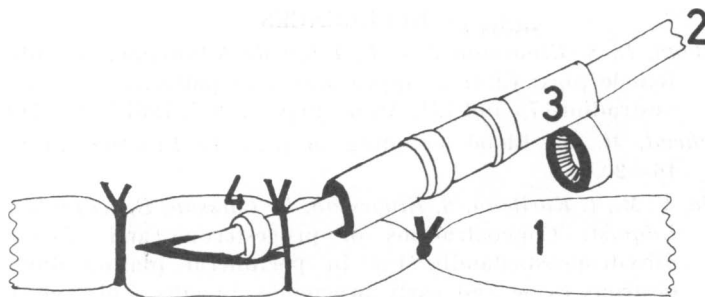


Figure 1. Technique for fixation of the Silastic catheter to the vein.

1 = vein, 2 = Silastic catheter, 3 = a large gauge blunt needle
4 = Silastic ring.

emerged from the vein incision. The ring was first placed on a large gauge blunt needle (see Fig. 1) and then pulled over the catheter to the incision. The ring was slipped over the catheter and the needle was thereafter withdrawn. The ring was firmly attached to the catheter without occluding it. Two sutures over the catheterized vein and the catheter were applied (3-0 Vicryl) to each side of the ring. The catheter was passed subcutaneously to the cervical or lumbar areas by way of a stainless steel probe and emerged onto the skin after rotation of the animal to lateral position. The end of the catheter was connected to a two-way intravenous cannula (Venflon, Viggo, Sweden) and stitched to the skin. An easily openable canvas cover sutured to the skin covered the cannula. The catheter was flushed and filled with heparinized saline between blood samplings in order to avoid clotting. The animals were returned to pens individually or in groups of 3-4 pigs. Lactating sows were allowed to be in contact with their piglets during the sampling period. The catheter was kept patent for an average period of 3-4 weeks.

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