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An Improved Cannula for Gastric and Intestinal Fistutas.

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The care of dogs with cannulated gastric or intestinal fistulas is often difficult because many of the animals will pull their cannulas out at the first opportunity. In the latter part of the year 1938 we undertook to design a cannula which could not be pulled out. To accomplish this it was necessary to use a larger inner flange than could conveniently be installed when the cannula was constructed in the usual way. The cannula was, therefore, designed with a removable flange which could be inserted separately into the stomach or intestine; the remainder of the cannula could then be attached to it. Once the flange is inserted, no great force can be applied to it through the visceral wall because of danger of injuring the mucosa; consequently, it was necessary to provide a wrench which could be applied through the lumen for tightening the flange on the cannula. The cannula and the wrench are illustrated in Fig. 1.

To install the cannula, the viscus to be cannulated (stomach or intestine) is secured through an abdominal incision and an opening made, barely large enough to admit the separated flange. After the flange has been inserted, the appropriate end of the inner tubular portion of the cannula is inserted through the opening and screwed into the flange, as far as possible, by hand. The wrench is then assembled inside the cannula in such a way that the hooks on the lower ends of the 1/8 inch rods grasp the flange in its narrow diameter. The tapered plug with a knurled head is slid down the 3% inch rod and rotated until the fins which project from its sides fall into the grooves on the inner aspect of the cannula; the screw joint is then firmly tightened. After this portion of the cannula has been tied in place with a purse-string suture, the inner tube is brought out through a stab wound in the lateral abdominal wall and the outer metal part screwed on from the outside. Generous lubrication of the cannula with sterile petrolatum facilitates this operation. After healing is complete the animals require no more attention than stock animals.

Since the new type cannula was devised, it has been used in preparing gastric and duodenal fistulas in 9 dogs, all of which are living at the present time except one, which lived for 18 months

IMPROVED FISTULA-TUBE



F1G. 1.

Apparatus Described in the Text.

A. Sectional view of the parts of the cannula shown disassembled. At the bottom the flange is shown in outline with the inner tubular portion screwed in place. The inner flange and tube and the cap (black) are made of hard rubber, the outer portion (diagonal shading) of aluminum alloy "17ST." The stopper is a No. 6 cork. The rubber parts of the cannula are sterilized in alcohol, since they cannet be boiled without warping.

B. The flange wrench, assembled.

C. Parts of the flang' wrench shown disassembled. The material is stainless steel, except the tapered plug with knurled head which is made of aluminum alloy ''17ST.''

Note that the scale for "B" and "C" is one-half that for "A."

after operation. This is in contrast with our previous experience over a period of 8 years, in which approximately half our animals were lost within the first few weeks after operation, generally because the cannulas either came out or were pulled out or destroyed by the animal.