

Intravenous Catheterization for the Administration of Large Volumes of Fluid

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Many intravenous catheters have a slow delivery rate, are difficult to hook up or become disconnected or kinked off if the cow starts to move around. To overcome some of these problems, a non-conventional catheterization system was improvised using a Ral-gun needle, a urethral catheter (Sovereign, Monojet, trademark, 8 French size) and a strip of rubber cut from an old inner tube.

The Ral-gun needle is used to make the venapuncture and then the catheter is passed through the needle into the lumen of the vein. Usually one half of the length of the catheter is passed into the vein. The Ral-gun needle is withdrawn from the vein and left attached to the catheter outside the vein. The catheter itself is connected to a regular intravenous tube set or a Willoughby apparatus set. This connection or hook-up is facilitated by an intravenous tube connector that is inserted into a notch in a one inch rubber strap cut from an old inner tube. The strap with the catheter connected to it is passed around the cow's neck and tied. No sutures are required except if the cow struggles excessively one or two sutures are used to anchor the rubber strap to the cow's neck and prevent it from slipping anteriorly or posteriorly along the cow's neck.

Some individuals may experience technical difficulty in inserting a Ral-gun needle into the vein. To overcome this problem you can use a 14 gauge 1½" or 2" needle inserted through the lumen of the Ral-gun needle to serve as a trochar which is withdrawn when the Ral-gun needle is in the lumen of the vein.

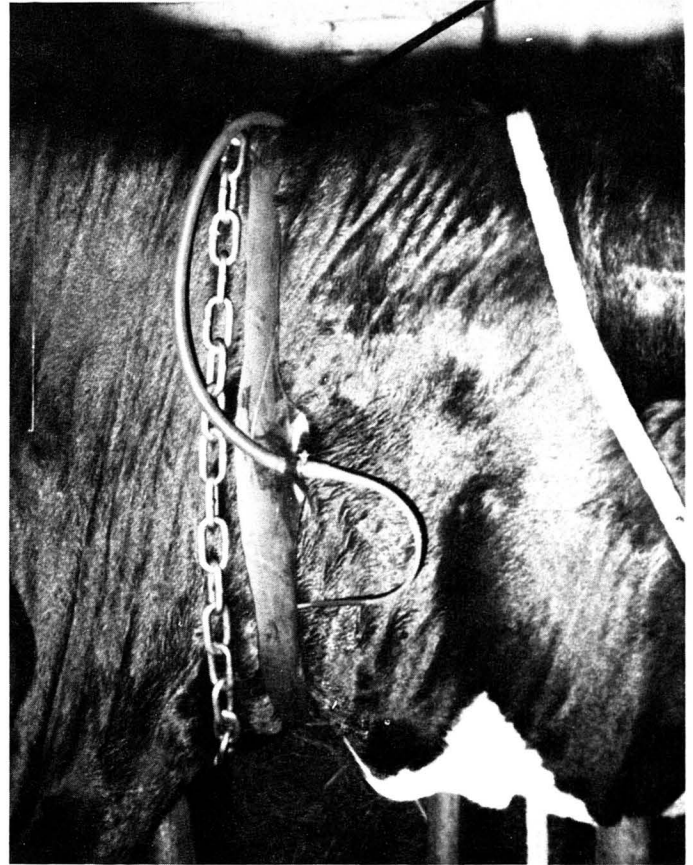


Illustration of the intravenous procedure.

Indwelling Bloat Relief Instrument

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The indwelling bloat relief instrument, nicknamed "bloat whistle" is intended for use in chronic bloat of ruminants. The instrument is made of a neutral plastic material so no tissue reaction is encountered. The instrument is designed so that the lumen is sufficient size to prevent ruminal contents from clogging the opening. A 7/8" bovine cannula can be inserted through the lumen and frothy material evacuated from the rumen by a pumping-siphoning action. Bloat medicines can be administered directly through the lumen of the instrument.

With the animal standing and using a tight tail press the

animal is clipped and local anesthesia is given in the left lumbar area. A 1¾" incision is made through skin, muscle and peritoneum of the left paralumbar fossa. The rumen is entered next with the same length incision. One of the cut edges of the rumen must be grasped by the fingers or forceps. Through this opening one half of the bloat instrument is inserted tongue first, followed by entry of the second half in a similar manner. The two halves will fit together properly by the male/female connection. The 4" plastic circle with collar will slide over the cylinder of the bloat instrument thereby holding it together. On the edges of the plastic ring

are keys which, with a twisting motion, will fit into slots provided thereby holding everything in place. The wound under the plastic ring should be sprayed with a recognized insect repellent spray. The animal can be turned loose and is normally eating within a 10 minute period.

Other uses of the "bloat whistle" are in cases of acute acidosis. When instrument is inserted, desired carminatives

are introduced and animal returns to profitability for the producer. The "bloat whistle" may be left in place through feeding period and goes to slaughter with the animal. Tests have been conducted showing normal feedlot cattle have gained faster (from 40-60 pounds in a 4 month period) with a "Bloat whistle" in their side than other normal animals in a 1800 feedlot.

Practice Tips for the "Normal" Repeat Breeder

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In dairy practice many of my most frustrating cases used to be cows that cycle regularly (every 20-22 days), palpate normal on rectal exam, show dramatic and appropriate length heats, but fail to conceive after repeated inseminations. Many times dairymen will ask me about these cows when I am at the farm for another reason and the problem cow has just "returned" again that day for the sixth time. For a few years I would palpate the cow and mumble "she feels good, breed her again and give her GnRH this time." It was after dairymen began saying "But Doc, you said the same thing two heats ago," that I began to develop a somewhat more sophisticated approach to these cows. I no longer fear these cows, but view them as an opportunity. Getting a dairyman's best cow pregnant can be quite a practice builder.

Before I do any major therapy on a problem breeder, I always ask the dairyman if he can economically justify further treatment of the cow. He must consider both veterinary expense and days open in this justification.

If the dairyman decides to proceed, I begin by examining the vulva and entrance to the vagina for evidence of vaginal contamination. I believe many of these problem cows, while not having obvious pneumovagina, have either conformation defects or stretched or torn vulval tissue which allows the vagina to stay contaminated with air and manure. I also do a speculum exam, looking especially for contamination of the anterior vagina and external cervical os. If I feel any vaginal contamination is occurring, I do a Caslicks surgery, leaving only a two finger opening in the vulva. I have had the best luck using a two layer closure, using 2-0 vicryl for the subcutaneous tissue and 2 vetafil for the skin. I use a continuous suture pattern for both layers. The complete procedure can easily be done in 20 to 30 minutes.

The next step is a therapeutic uterine flush. This procedure can be done on any open cow, but also works extremely well as a post breeding treatment 24 hours after insemination. This is very useful since many dairymen will

call to ask about their problem cow when the cow is in standing heat. I normally tell the farmer to breed the cow and examine her the following day. Depending on the cows previous history, I often recommend giving GnRH at that breeding, to further enhance my chances and prevent the cow from going cystic. I use an 18 French 2-way foley catheter with a 30cc cuff, and an embryo transfer fluid container and connector. I use the standard procedures for flushing donor cows in embryo transfer work. The two uterine horns can be flushed separately or the entire uterus can be flushed at once. The only expertise needed for the whole body flush is the ability to pass the catheter through the cervix.

I use a liter of .9% saline solution for the flush media. I usually add a broad spectrum antibiotic unless I plan to culture the reclaimed fluid. I do this if I suspect infertility due to infection. The fluid can also be spun down and any sediment examined microscopically. I flush the uterus repeatedly with 60-100cc of fluid per horn, causing the horn to expand to the size of a 40 day pregnancy. I then massage the horn and drain the fluid back out. This is repeated in both horns until all the fluid is used. Usually the fluid will become slightly blood-tinged after repeated flushes. I believe the endometrium on some of these cows is quite friable. These cows usually show blood-tinged fluid right away in both horns. I think this is significant and I give the dairyman a poorer prognosis on these animals.

Greater than 50% of the cows I have flushed to this point after being bred have become pregnant on that service. Most of the remainder become pregnant on the next heat. These are cows that have been bred at least four times previously and most at least five or six. One cow I flushed while open had been bred nine times. She became pregnant on the first service following the therapeutic flush.

Both techniques have been very rewarding to me and I feel certain they can be useful to other dairy veterinarians. I encourage all of you to try them on your next problem cow.