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Teaser Bulls

by
Charles Christenson*

Artificial insemination has been practiced in the dairy cattle industry for many years, but in the last few years this breeding technique has found its place in the beef cow herds across the nation. Since 1969 the use of artificial insemination in beef cow herds has increased 3½ times. The key to bovine artificial insemination programs is detecting estrus and getting the cow bred near the end of her male acceptability period. With dairy cattle heat detection is relatively easy since the herdsman comes in contact with the cows in the milking parlor at least twice per day.

With beef cows being placed in pastured areas away from the farmstead, the most practical way initially was to observe the cow herd for a couple of hours early in the morning and again at dusk for signs of estrus. This observation requires time (dollars) and a lot of individual patience and daily persistence.

Due to this problem of difficult heat detection along came the advent of the increased use of teaser (gomer) bulls in beef artificial insemination programs. Teaser animals are bulls which are surgically altered by one of several techniques so that they become either sterile or incapable of successfully copulating with a female. For use as teasers producers have found that

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good, sexually aggressive yearling grade bulls that have been inspected for breeding soundness and declared free of genital disease are ideal. Once the bull has been altered and is properly healed from the surgery, he is equipped with a chin ball or brisket marker and allowed to intermingle with and detect cows in the herd that are in estrus. After mounting in an attempt at mating or in the precopulatory activity, the cow receives a visible mark of paint or dye on her back or rump from the bull and thus the herdsman can then corral her and proceed with the insemination.

In this paper the author will attempt to review the surgical techniques offered in the literature for preparation of teaser bulls. Actual step by step detail of each procedure is beyond the scope of this article, but each review should give the practitioner in the field an idea of what can be done and what method might best fit into his practice. The techniques that will be described in the first part of the article consist of alteration to prevent the male from achieving normal copulation. The second group of procedures allows the teaser bull normal sexual contact but sterilizes him by some type of interruption of his seminal tract. The advantages of the first group of techniques in preventing genital disease weighs heavily in their favor as genital disease prevention is one of the real advantages of artificial insemination.

Penectomy

This surgery is performed in a standing position with the head restrained in a head gate and chute. Anesthesia of the surgical site is attained by an epidural block in association with a pudendal nerve block specific for the penis.

A four inch midline incision is made at a point halfway between the anus and the attachment of the scrotum to the body wall. Through blunt digital dissection and traction, the penis is pulled from its ventral abdominal location. Once the penis is completely exteriorized it is transected one inch distal to the lower commissure of the skin incision and ligated near the

cut end. The penis is then incised transversely at the level of the incision's lower commissure on its posterior aspect to the greatest diameter of the urethra. The urethra is then incised dorsally one inch and sutured by simple interrupted mattress sutures to the skin, including some penile tissue in the suture. A small artery in the corpus cavernosum on the caudal aspect of the penis may require ligation at this time.

The penis is then replaced in the skin incision and attached at the dorsal and ventral commissures by the placement of vertical mattress sutures.

To maintain patency of the urethra as surrounding tissue heals, a four inch piece of plastic tubing is placed retrograde up the urethra and fixed by two stay sutures to the skin so that it protrudes slightly from the exposed urethra. This tubing is removed seven to ten days after surgery. For a few days post-operatively the animal should be observed for normal urination since occasionally a blood clot may occlude the tube. The bull should be rested at least sixty days before actual use in the herd begins.

Preputial Purse String

By placing a subcutaneous purse string suture of three-eighths inch umbilical tape approximately one inch posterior to the preputial orifice, the bull cannot protrude his penis and becomes an acceptable teaser bull. The purse string must be just strong enough to prevent penile protrusion, yet also enable passage of urine. One claim for the advantage of this procedure is that the purse string suture can be removed in four to six weeks and the bull can be used as a clean-up bull. Phimosis will often result if the purse string is not removed at this time.

Lateral Deviation of the Penis

With this technique the site of the preputial orifice is changed so that the penis can be exteriorized, but the bull due to the angle of the penis and prepuce is unable to achieve intromission.

Local infiltration of anesthetic is used on the ventral sheath. A skin incision is made on the midline three inches caudal to the preputial orifice to a point cranial to the scrotum. The incision is then carried cranial to encircle the prepuce to free a circular flap of skin that remains intact with the prepuce and will be transplanted to the new preputial site. To free the penis from the subcutaneous tissue a one inch glass speculum can be placed over the penis, preputial sheath, and skin and worked gradually caudad to aid blunt dissection as the penis is freed from the underlying tissue.

Critical to this procedure is the decision of what angle from the midline to place the new preputial opening. Depending on the breed and conformation of the bull, a circular piece of skin with the same diameter as that accompanying the prepuce is excised at an angle of 35 to 40 degrees from the midline. A subcutaneous tunnel is created from the new preputial site to just cranial to the scrotum and the penis and prepuce are grasped by a long forceps and pulled cranial through the tunnel to the new site. To fix the prepuce in its new location, cotton sutures in a Lembert pattern are used. The ventral midline incision is closed with continuous mattress sutures. At least sixty days of rest are required to insure adequate healing.

There have been some reports from the field that even though the penis is deviated at these angles, some bulls can adapt to their handicap and achieve intromission. This defect is probably due mostly to the surgeon's improper assessment of the total conformation and size of the animal in deciding the placement of the lateral deviation.

Penis Tie Down

Another means of surgically preparing a teaser bull is by creating an adhesion of the penis to the ventral abdominal wall so that the penis cannot be protruded.

The incision is made midway between the scrotum and the end of the prepuce. Blunt dissection is used to isolate the dorsum of the penis and the median raphe of

the abdominal wall which are both then scarified for about 3 cm. to form the adhesion. Stainless steel sutures are then placed through the tunica albuginea and corpus cavernosum of the penis and anchored to the scarified median raphe. Simple interrupted sutures are then used to close the skin incision.

When performed in young bulls of yearling age, little edema and hemorrhage occurs in the area. Aftercare consists of keeping the bull from any sexual excitement for two weeks to allow a strong adhesion to form.

Bull Chastity Tube

A commercial prosthetic device, the Bull Pen-O-Block,* has become popular in the last year in teaser bull preparations. To prevent protrusion of the penis a flanged plastic tube about five inches long is placed inside the sheath and anchored by the placement of a stainless steel cannula with washers and pins to hold it in place. A regular trocar is used to penetrate the skin and preputial lining for passage of the cannula.

One of the real advantages of this procedure was that ideally the device could be removed from the bull and he could be used as a clean-up bull later in the breeding season. Reports from the field of necrosis around the area of the anchor cannula and in some cases the actual sloughing of the whole device indicate that this method of teaser bull preparation may not be recommended for every case.

Vasectomy

With this procedure a one to two inch segment of vas deferens is removed. The operation may be performed on either the anterior or posterior surface of the scrotum. One incision near the base of the scrotum for the removal of each vas deferens segment is recommended. Ligation of the vas deferens on each side of the portion to be removed is necessary to maintain identity should the surgeon fail to receive positive histopathological iden-

*American Breeders Service, DeForest, Wisconsin.

tification of vas deferens and have to re-operate. The necessity of sending the removed tissue to a laboratory for histopathological confirmation cannot be over-emphasized. The scrotal incision is closed by two or three interrupted sutures.

Another method of confirming the success of the operation is to electroejaculate the bull in two weeks to see if any viable spermatozoa are being shed. The real disadvantage of this technique is that the suppression of genital disease transmission achieved by artificial insemination is negated.

Epididymectomy

Removing the tail of the epididymis is one of the simplest and most economical means of preparing a teaser bull. The surgical sites are on the ventral aspect of the scrotum over the epididymal tails. Anesthesia is provided by local infiltration of the area with the animal in lateral recumbency.

Two incisions, one for each epididymal tail must be made just large enough so the tails protrude through the scrotal wall while the rest of the testicle remains inside the scrotum when the animal returns to a standing position. Removal of a one-inch segment of the epididymal tails with ligation on each side of the transected portions via suture material or electrocauterization can be used to successfully interrupt the seminal tract. Care must be exercised not to injure the tunica albuginea and underlying testicular tissue which could atrophy with resultant loss of libido. Electroejaculation as a check on the success of the operation is recommended.

To decrease the possibility of genital disease spread, one of the procedures used to prevent penile protrusion can be used in combination with this technique. A preputial obliteration technique used in combination with epididymectomy has been described by Shires in unpublished work.

Summary and Conclusion

In the bovine section at Iowa State University Clinics this past spring twenty-five penectomies, six lateral deviations, and several vasectomies were performed to prepare teaser bulls. Reports so far from clients in the use of these bulls in their breeding programs have been quite positive.

The most practical procedure considering ease of surgery in the field and genital disease control is the penectomy. Performing the operation on a young bull at least sixty days before the breeding season begins, using him for one season and marketing him in the fall seems desirable for most breeding programs. If the bull is kept for just one season, the possible loss of libido from the absence of actual sexual contact is minimized. Also the bull will not have the cost of wintering feed charged against him.

Though each method of altering bulls for teasers has some drawbacks, most methods have been used successfully by veterinarians in their individual situations. Which method is used depends many times on client preference.

Bibliography

1. Beck, C. C.: Vasectomy vs. Caudal Epididymectomy. *Veterinary Medicine/Small Animal Clinician*, (September, 1973): 1015-1017.
2. Belling, T. H., Jr.: Preparation of a "Teaser" Bull for Use in a Beef Cattle Artificial Insemination Program. *J.A.V.M.A.*, Vol. 138, No. 2, (June 15, 1961): 670-672.
3. Bierbely, F., Bierbely, S.: A Simple Method for Preparing Teaser Bulls. *Veterinary Medicine/Small Animal Clinician* (October, 1973): 1086.
4. Frank, E. R.: *Veterinary Surgery Notes*. Burgess Publishing Co., Minneapolis, Minn., 1951.
5. Frazer, J. W.: Phallectomy: Procedure for Preparing Marker Bulls for Artificial Insemination of Beef Cows. *Veterinary Medicine/Small Animal Clinician*, (August, 1973): 863-870.
6. Hull, Bruce L.: Personal Communication. Iowa State University, College of Veterinary Medicine, Ames, Iowa.
7. Oehme, F. W.: Resection of the Bovine Epididymis. *Veterinary Medicine/Small Animal Clinician* (June, 1968): 603-606.
8. Roberts: *Veterinary Obstetrics and Genital Disease*, 2nd ed. (1971): 441-442.
9. Royes, B.A.P. and Bivin, W. S.: Surgical Displacement of the Penis in the Bull. *J.A.V.M.A.*, Vol. 163, No. 1 (July 1, 1973): 56-57.
10. Smith, A. P.: Epididymal Transection for Sterilizing Bulls. *J.A.V.M.A.* (March 15, 1967): 633.
11. Straub, O. C. and Kendrick, J. W.: Preparation of Teaser Bulls by Penectomy. *J.A.V.M.A.*, 147, No. 4 (August 15), 1965: 373-376.
12. Tharp, V. L.: Vasectomy in the Bull. *J.A.V.M.A.* (February, 1965): 96-99.
13. Antonio de Padua Ferreira da Silva Filho, M. V., Personal communication and assistance, College of Veterinary Medicine, Iowa State University, Ames, Iowa. 1974.