

بعض التعديلات في التكنيك الجراحي لتثبيت الأنبوبة المعدنية في الأغنام

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أجريت التعديلات الخاصة بالطرق الجراحية الحديثة لتثبيت أنبوبة الكرش في الأغنام على ١٢ حالة وثبت نجاحها من حيث عدم التسيب، وطول بقاء الأنبوبة وهي المضاعفات المحتملة عند إجراء مثل هذه الجراحة .

وقد تبين فاعلية عقار الرومبون كمخدر للأغنام ولمثل هذه الجراحات .

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TECHNICAL MODIFICATION FOR RUMEN CANNULATION IN SHEEP

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SUMMARY

Technical Modification for perfect fixation of the rumen cannula in 12 rams was tried with success. The value of the surgical technique was evaluated as regards to the expected complications. No ill-effects had been encountered in any of the cases. Rompun "Baver" given i. m. in a dose of 0.3 mg/kg body weight proved to be ideal for such technique.

INTRODUCTION

In cattle ruminal fistula has been practised since long time. The value of its performance lies mainly in research purposes especially in the field of physiology of digestion, nutrition and pharmacology. The surgical technique adopted for ruminal fistula or ruminal cannulation had been reported by many authors who had admitted the single abdominal incision and then fixation of the rumen to the skin edges. Some of them had succeeded to keep the cannula tube introduced in the rumen through the fistula for a longer time, (NICHOLS, 1947; JANET, 1948; NAGRONNI, 1954; MICHEAL and MCKINIEY, 1954; Dougherty, 1955; SCHAUTZ, 1957; BINNS, and JANES, 1959; BALCH and COWIE, 1962; MONZALY 1974). Naturally there existed some complications mainly due to infection. Leakage, sometimes had been met with and peritonitis followed by death may happen. The present study deals mainly with a modified technique for the rumen cannula the aim of which is to ensure perfect fixation of the tube to stay a longer time and in the meantime to keep the inside of the rumen under normal condition so as to obtain better records for experimentation than that procured through the classical surgical methods.

Materials and Methods

Twelve Awassi rams of different age and weights were submitted to the experiments which were needed for nutritinal purposes.

The cannula used was manufactured of hard plastic material 2 cm. diameter with complete fittings.-

Each animal was clinically examined before the procedure which was done as follows. The animal was fastened at least 12 hours before operation. Rompun "Bayer" was given intramuscularly at a dose rate of 0.3 mg/kg body weight 10 minutes before operation. Local infiltration anaesthesia xylocaine was also used at the line of incision. The whole area of the flank was prepared as for aseptic operation. The animal was securely held with its right side on the table. The site selected was the left paralumber region 2 inches below the transverse processes of the lumber vertebrae midway between the curvature of the last rib and the coxal tuber or two fingers breadth below the transverse processes of the lumber vertebrae and three fingers breadth from the curvature of the last rib.

SURGICAL TECHNIQUE

Step 1: A longitudinal incision 2 inches long was made through the skin and subcutaneous tissue going through the abdominal muscles and fasciae and finally the peritoneum (initial wound). Through this wound, a fold of the rumen was grasped and drawn outside. The ruminal wall was then opened fairly wide to introduce the plastic cannula in hand. The edges of the ruminal wall were then tightly closed around the neck of the cannula applying only one simple interrupted stitch at the lower angle and the other stitches at the upper angles. Again a purse string suture was made through the ruminal serosa tightly around the stem of the cannula tube to prevent leakage between the canula and the ruminal wall.

The latter should be inverted so that the serosa comes in contact with the cannula wall. The rumen was replaced in the abdominal cavity while the stem of the tube was kept gently outwards.

Step 11: Another small circular disc shaped incision of the skin (accessory wound) was made just beside and posterior to the initial one. The subcutaneous tissues together with the abdominal muscles were only pierced open by blunt dissection using one finger. The cannula tube was then forcibly withdrawn exteriorly through this accessory wound. It was then covered and fitted in position as usual.

The initial wound was then sutured as for a wound intended to heal by first intention; the peritoneum, muscles and fascia together using cat gut No. 0 interrupted sutures and then the skin using silk mattress sutures.

Aftercare : Food should be withheld for at least 12 hours. Antibiotics were given parentally and locally. The cannula tube with its fittings was kept clean during the healing period which was usually 8-10 days. Each animal was isolated in a cage and prevented from breaking the plastic tube through various movements.

RESULTS AND DISCUSSION

The present technique adopted for rumen cannulation in sheep proved to be simple, efficient and surpassed other methods. Healing of the initial and accessory wounds occurred within 10 days without any complications. The cannula tubes were kept in position well functioning for as long as 3 months without leakage. The forcible extraction of the cannula tube through the accessory opening undoubtedly had fitted it tightly inside and outside rumen. This type of fixation naturally favoured the healing process around the cannula and in the meantime prevented the leakage and looseness of the tube an event which is usually met with other described methods. In two cases, the tube had been detached and fell down due to vigorous movements of the animal by striking the tube against hard walls of the cage, however, a fistula was left and both animals survived.

The way of suturing the rumen serosa around the cannula tube is important in prevention of leakage. At the lower part only one catgut stitch is used to prevent possible tearing of the rumen wall especially in young animals. The rest of the stitches should be applied at the uppermost part so as the rumen content will find no way to escape. This is simply because the level of the surface of the ruminal contents hardly reaches the upper most portion of the ruminal incision. Again the purse string sutures around the base of the tube undoubtedly reinforce the other serosal stitches. Care must be taken during the process of transferring the stem gently of the cannula tube through the accessory wound. This procedure must be carried out and as quickly as possible for fear of peritoneal contamination. However, plugging of the nozzle of the tube from the beginning appeared necessary to ensure security against contamination.

As regards anaesthesia, Rompun alone or together with local infiltration anaesthesia proved to be ideal for such cannulation. The effect of the drug lasted for a period of about two hours which was fairly sufficient for such operative procedure. No ill effects had been encountered in any of the operated cases. The administered dose was 0.3 mg/kg body weight, as recommended by (MOHAMMED 1975), given by the intramuscular route.

References

- Balch, C.C. and A.T. Cowie (1962).- Permanent rumen fistulae in cattle. *Cornell Vet.* 52, 205.
- Binns, W. and L.F. James (1959).- A plastic rumen fistula apparatus for sheep, its insertion and use. 3. *Am. vet. med. Ass.* 135, 603.
- Dougherty, R.W. (1959).- Permanent stomach and intestinal fistulas in ruminants; some modifications and simplifications. *Cornell. Vet.* 45, 331.
- Janet, I.G. (1948).- The production of rumen and abomasal fistulae in sheep. *J. Coun. scient. Ind. Aust.* 21, 311.
- Micheal, S. and N.M. Mchiniey (1954).- Rumenotomy simplified. *J. Am. vet. med. Ass.* 125, 26.
- Mohammed, N.R. (1957).- Trials on Rompon application in sheep. "Personal communication".
- Monzaly, M. (1973).- Simplified surgery for rumen cannulation of goats under the influence of "Rompun". *Assiut Vet. jour.* Vol. 1, 15.
- Nagronni, L. (1954).- A steer with a twelve year old rumen fistula. *J. Am. vet. med. Ass.* 125, 451.
- Nichols, R.E. (1947).- Permanent enteric fistulas for studies of ruminant digestion, assimilation and elimination. *J. Am. vet. med. Ass.* 8, 166.
- Schnantz, J. (1957).- A rumen fistula modification. *Am. J. vet. Res.* 18, 73.
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