

## Left Paramedian Abomasopexy in Cattle

Inhyung Lee\*, Norio Yamagishi, Kenji Oboshi and Haruo Yamada

Department of Veterinary Surgery, Obihiro University of  
Agriculture and Veterinary Medicine, Inada, Obihiro, Hokkaido, 080-8555, Japan

### ABSTRACT

**Aims of surgery of left displacement of the abomasum (LDA) are to return the abomasum to its original position and create a permanent attachment in the position to prevent recurrence. Left paramedian abomasopexy was performed on six Holstein cows with LDA because normal position of the fundus of the abomasum is located in the left of the midline and the displacement initially only involves the fundus of the abomasum. All cows were recovered without recurrence of LDA. It is considered that the left paramedian abomasopexy could be a major alternative as a surgical treatment of LDA.**

**Key words :** paramedian abomasopexy, cattle, left.

Abomasal displacement occurs to either the right or left side of the abdomen when gas accumulates within abomasum, and left displacement of the abomasum (LDA) is most frequently encountered [9]. Although a variety of surgical techniques are well known [5,7,8], all the treatments are aimed at returning the abomasum to its original position and at creating a permanent attachment in the position to prevent recurrence [4,5].

We had some questions about the surgical treatments of LDA. Firstly, where is normal position of the abomasum in cattle? Recent studies show that the fundus of the abomasum is located in the left of the midline and then crosses the midline from left to right and passes into the pyloric part [1,3]. Secondly, where is the most suitable site for suture of the abomasum to abdominal wall? The displacement initially only involves the fundus of the abomasum [3] and it is the middle part that travels farthest from its usual position on the abdominal floor [1]. It is considered that the fundus adjacent to the middle part of the abomasum should be sutured to left abdominal wall for

surgical treatment of LDA. Although in right paramedian abomasopexy, it have been recommended the muscle layer of the greater curvature of the abomasum for suture to the right abdominal wall [2,6], this method results in abnormal position of the abomasum transferred from left to right side. And so, we decided to perform the left paramedian abomasopexy for surgical treatment of LDA in right dorsolateral recumbency.

The six Holstein cows with LDA were sedated with 2 % xylazine HCl (0.1 mg/kg, IV) (Xylazine) and placed in 60 degree tilt right dorsolateral recumbency. After aseptical skin preparation and line block by injection of 20 ml of 2 % lidocaine HCl (Xylocaine), about 15 cm skin incision was started at 10 cm portion caudal to the xiphoid cartilage and 10 cm left from the midline. After the incisions of the rectus sheaths, rectus muscle and peritoneum, we could easily confirm the abomasum under incision line. Decompression of the abomasum was performed in 2 cows. After exploration of the abdominal cavity, a 15 cm caudal portion from the reticulo-abomasal junction along the origin of attachment of the greater omentum was sutured to middle portion of medial incision line of the internal rectus sheath using No. 2 polyglactin 910 (Vicryl). The suture of origin of attachment of the greater omentum was preferred because of our clinical impression that the muscle layer of the greater curvature of the abomasum in LDA, especially in atony and dilatation, was relatively thin and weak than the normal abomasum. The internal and external rectus sheaths, and subcutaneous tissue were sutured by simple continuous pattern. Intradermal suture of skin was performed using the same suture material. Atipamezole (1/10 of the injected xylazine dose, IV) (Antisedan) was used for the reversal of sedation [10]. All cows were easily coaxed to stand and walked without ataxia within 2 minutes. There was no recurrence of LDA in all of the cows until now.

Our clinical impression of left paramedian abomasopexy in 60 degree tilt right dorsolateral recumbency was the convenience to perform an operation. The abomasum was returned to a near-normal position, and less manipulation was required because the incision line was approximately the most upper portion of abdominal cavity in this position. In right displacement of abomasum or torsion, it would

\* Corresponding author: Inhyung Lee, Department of Veterinary Surgery, Obihiro University of Agriculture and Veterinary Medicine, Inada, Obihiro, Hokkaido, 080-8555 Japan  
Phone: +81-155-49-5379, Fax: +81-155-49-5379  
E-mail: s04061@st.obihio.ac.jp

seems that suture of the abomasum along the origin of attachment of the lesser omentum could be done after right paramedian celiotomy in left dorsolateral recumbency. In this case, care must be taken not to include a branch of the vagus nerve in the suture.

Right flank omentopexy, left flank abomasopexy and right paramedian abomasopexy can all be used with high degrees of success by skilled veterinarians [8]. Based on the milk yield at one month after surgery, there may be a slight advantage to right paramedian abomasopexy in cows with uncomplicated LDA [2]. We considered that the left paramedian abomasopexy could be performed by using almost same technique of right paramedian abomasopexy. Therefore, we conclude that the left paramedian abomasopexy could be a major alternative as a surgical treatment of LDA.

## References

1. **Dyce, K. M., Sack, W. O. and Wensing, C. J. G.** Textbook of veterinary anatomy. pp 671-694. 2nd ed. WB Saunders, Philadelphia, 1996.
2. **Fubini, S. L., Ducharme, N. G., Erb, H. N., and Sheils, R. L.** A comparison in 101 dairy cows of right paralumbar fossa omentopexy and right paramedian abomasopexy for treatment of left displacement of the abomasum. *Can. Vet. J.* 1992, **33**, 318-324.
3. **Geishauser, T.** Abomasal displacement in the bovine - a review on character, occurrence, aetiology and pathogenesis. *J. Vet. Med. A* 1995, **42**, 229-251.
4. **Hickman, J., Houlton, J. E. F. and Edwards, B.** An atlas of veterinary surgery. pp 78-80. 3rd ed. Blackwell Science, Cambridge, 1995.
5. **Howard, J. L. and Smith, R. A.** Current veterinary therapy 4; food animal practice. pp 522-527. WB Saunders, Philadelphia, 1999.
6. **Oehme, F. W.** Textbook of large animal surgery. pp 399-500. 2nd ed. Williams & Willkins, Baltimore, 1988.
7. **Rebhun, W. C., Guard, C and Richards, C. M.** Diseases of dairy cattle. pp 106-154. Williams & Willkins, Philadelphia, 1995.
8. **Saint Jean, G. D., Hull, B. L., Hoffsis, G. F. and Rings, M. D.** Comparison of the different surgical techniques for correction of abomasal problems. *Comp. Cont. Ed. Pract. Vet.* 1987, **9**, F377-F382.
9. **Smith, B. P.** Large animal internal medicine. pp 868-874. Mosby, St. Louis, 1996.
10. **Thurmon, J. C., Tranquilli, W. J. and Benson, G. J.** Lumb & Jones veterinary anesthesia. pp 183-209. 3rd ed. Williams & Willkins, Baltimore, 1996.