Efficacy of Moxibustion after Rolling Correction in Dairy Cows with Abomasal Displacement


* College of Veterinary Medicine, Chungbuk National University
§ College of Veterinary Medicine, Chonnam National University
† College of Veterinary Medicine, Chungnam National University
‡ Lee’s Animal Hospital, Korea

Abstract: This study was performed to assess the efficacy of moxibustion after rolling correction in dairy cows with abomasal displacement (AD). The experimental group comprised 86 Holstein cows with left displacement of the abomasum (LDA) and right displacement of the abomasum (RDA), with a mean age of 3.8 with AD during a 2-year period. The cows were rolled for correction of AD. After the rolling procedure, moxibustion was conducted on six acupoints once a day during the course of treatment. After repositioning the abomasums, the bilateral points of BL-20, BL-21 and BL-26 were then stimulated. During the follow-up of 1 week, 67 (93.1%) of 72 LDA and 12 (85.7%) of 14 RDA cows were released as cured after moxibustion. In conclusion, moxibustion effectively treats AD following rolling correction in dairy cows.

Keywords: Moxibustion; Abomasal Displacement; Cow.

Introduction

An abomasal displacement (AD) is one of the most frequent reasons for abdominal surgery in dairy cattle breeds. AD occurs on either side of the abomasum when gas accumulates within the abomasum; left displacement of the abomasum is most frequently encountered (Smith, 1996). Cows with AD may stop eating, have diarrhea, become dehydrated or have increased levels of liver enzymes which increase the risk of death and culling (Rohn et al., 2004).

AD is the third leading problem in cattle, after mastitis and infertility in Korea. AD is common in Korea because of the high-grain feed given to milk producing cows and
cows maintained under confinement. The utility of various diagnostic procedures and the effectiveness of various surgical or nonsurgical treatments have been widely debated. Nonsurgical treatments rarely result in cure (Buchanan et al., 1991). Surgical procedures used for correction of AD include omentopexy (Gabel and Heath, 1969), abomasopexy (Petty, 1981), blind suture (Walton et al., 1973) and bar suture (Grymer and Sterner, 1982).

Moxibustion is the heating of acupoints performed by burning a herb on or above the skin over acupoints. The herb (Artemisia vulgaris) is related to the chrysanthemum family, and is pungent smelling. Moxibustion is contraindicated in febrile conditions. Hair can ignite, especially if areas have been prepared with alcohol-based cleansing agents or disinfectants.

Although surgical correction of AD is generally successful in cattle, the high cost and postoperative complications are problematic (Rutgers and van der Velden, 1983). This study describes the efficacy of moxibustion after rolling for correction of AD in dairy cows.

Materials and Methods

Data were collected prospectively for 86 Holstein cows with AD during a 2-year period beginning on March 7, 2003. All cows were naturally affected with AD.

The study group comprised cows with left displacement of the abomasum (LDA) and right displacement of the abomasum (RDA), with a mean age of 3.8. The clinical diagnosis of AD was verified by auscultation and physical condition examinations. We first rolled the cows to reposition the abomasum and then stimulated bilateral points of BL-20 (Pi Shu; the spot 10 cm lateral to the dorsal midline in the 10th intercostals space), BL-21 (Wei Shu; the spot 10 cm lateral to the dorsal midline in the 11th intercostals space) and BL-26 (Guan Yuan Shu; the depression caudal to the last rib between the muscle of the longissimus muscle and iliocostalis muscle) (Fig. 1). The cows fasted for 3 to 6 hours prior to the rolling. Diary cows were sedated with 2% xylazine (0.1 mg/kg, IV, Rompun, Bayer). At the 10th minute following sedation, cows were rolled for correction of AD. Cows with RDA rolled the same way as cows with LDA. After the rolling procedure, all cows were easily coaxed to stand, and walked without ataxia within 3 min. Moxibustion was conducted on six acupoints once a day during the course of treatment. A burning moxa stick was placed on the skin surface of each acupoint until it burned up. Moxa sticks were made of compressed moxa wool, which should be placed on the skin for short periods only. Moxa sticks were 1 cm in length, 0.5 cm in diameter, and 1 g in weight, and the bottoms had adhesive tape. Moxa stimulation lasted 5 to 7 min for each acupoint. Cows were classified as cured based on clinical and physical evaluations. Abdominal auscultation has an important position in the physical examination of the abdomen. This is done by a stethoscope in the abdomen.

Statistics obtained from independent samples were used for the comparison of therapeutic effect between LDA and RDA. All statistical computations were made SAS system. Differences in the distribution of values between LDA and RDA were assessed
Results

During the follow-up of 1 week, 67 (93.1%) of 72 LDA and 12 (85.7%) of 14 RDA cows were released as cured after moxibustion. The treatment was more efficacious in the LDA than in RDA cows. The onset of intestinal peristalsis after moxibustion was within 1 to 2 min in good responders. Intestinal peristalsis proceeded faster in cows with LDA than in the RDA cows after moxibustion. Fast onset of intestinal peristalsis was positively associated with positive treatment outcome.

Discussion

AD is not a common feature in pregnancy cows. However, the proportion of pregnancy cows found in this study is line with findings of other authors (Constable et al., 1992). Generally, RDA cows showed more signs of an impaired general condition. In RDA, the omasum is displaced medially and can be involved in the volvulus with occlusion of its blood supply, and the liver and reticulum are usually displaced.
The heart rate and the rectal temperature of RDA cows were higher than LDA cows. This supports the observation that RDA is more severe and more rapid than in LDA. More RDA cows that were eating poorly or not at all, showed ruminal stasis and had either no feces or diarrhea which is in agreement with Rohn et al. (2004). In our study, cure rate was more efficacious in LDA than in RDA.

There are only a few studies on non-surgical treatments of cow with AD. Non-surgical treatments of cow with AD were our main concern in this study. Moxibustion is a generally accepted treatment for human and animal diseases. Moxibustion has been used effectively to treat delayed uterine involution in postpartum dairy cows (Korematsu et al., 1993). Acupuncture at BL-20, BL-21 and BL-26 has been used to treat AD. Electroacupuncture has similar effects as acupuncture in dairy cows with AD. Our results are consistent with these findings, and also suggest that electroacupuncture is effective against LDA but not RDA (Jang et al., 2003). Moxibustion is an effective treatment for AD, which requires stronger stimulation than acupuncture. The burning moxa gives off mild and constant heat which effectively penetrates tissues. We postulate that moxibustion may be therapeutic by dredging meridians, dispelling cold and wind, reviving ‘Yang’ for resuscitation, and promoting functional activities of the abomasum in dairy cows. Clinical validity of acupuncture to improve gastrointestinal dysfunction or disorder in humans appears to be attributed to reflex responses of duodenal motility (Noguchi et al., 2003), reflex responses of gastric motility (Sato et al., 1993) and gastric acid secretion (Noguchi and Hayashi, 1996) in anesthetized animals.

The decision whether to treat AD with moxibustion or surgery remains a complex one. Moxibustion is a prime treatment choice when AD is diagnosed early, due to its effectiveness when conducted shortly after onset of AD. In summary, moxibustion is more effective in dairy cows with LDA than in RDA cows. While also less expensive, more convenient and simpler than surgery, moxibustion effectively treat AD following rolling correction in dairy cows.

Acknowledgments

This work was supported by the Brain Korea 21 Project in 2006.

References

MOXIBUSTION IN ABOMASAL DISPLACEMENT


