

# Case selection and procedures to correct LDAs

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## Abstract

Case selection is as important as surgical technique in the correction of left displaced abomasum in dairy cattle. Important details to review prior to surgery will be outlined as well as the pros and cons of various methods of surgical treatment for left displaced abomasum.

**Key words:** LDA, left displaced abomasum, surgery, records

## Case selection

A veterinarian's role in LDA correction should include a careful review of the surgical candidate to ensure the best outcomes. Cattle with underlying health issues should be identified, and their ability to thrive and provide the farm a net positive economic outcome should be considered prior to a surgical procedure.

Common comorbidities include lameness, ketosis, metritis and digestive upset. Lameness and ketosis are the most insidious in their ability to derail post-operative performance and future milk production. Cows that are unable to visit the bunk comfortably or overcome chronic liver challenges are unlikely to return to a desirable level of production. While there is no objective guidance, be sure to consider a complete physical exam including long term health events history before proceeding with a surgical repair.

Complications of LDA such as ulcers, adhesions and vagal indigestion can also derail the success of a surgical intervention. All of these can be related to the chronicity of the displaced abomasum. There may be hints of chronicity present in the exam or records. If milk production records (daily weights or DHIA test) are available, look for timing of a change in milk yield. If rumination/activity monitors are present, these are likely your most sensitive historical record of where trouble began. If it appears a DA has been present for greater than one week, proceed with caution and be sure to advise your client on the decrease in prognosis.

Challenges of conformation or long-term health conditions may also limit the economic returns a cow is able to produce. Locomotion, udder health and body condition are the most critical among these. Screening of health records should extend back at least into the prior lactation, and should include test day somatic cell count, mastitis case history, lameness or trim remarks, and length of prior lactation and dry period. Physical exam should include consideration of udder and teat conformation, teat end condition, and examination of milk strippings. Cows with limited mobility due to feet, leg or spine issues are likely poor surgical candidates. Disposition may also be considered.

The value of an individual animal in the herd is a dynamic tug-of-war influenced by stocking density, calving pressure, cull price and springer price, as well as the future productive potential of the individual animal. Understanding the individual herd's replacement and culling dynamics is critical to delivering the best advice. ECON\IR is a quick way to examine these dynamics in DC305.

If genetic information is available, you may wish to include that information in your consideration. This may influence the patient's potential contribution to replacement genetics, or simply her own production potential. Common genomic indices to which you may have access include gDWP\$ and gNM\$. In DC305, run: sum by gnm\$ for lact=x\q10 to get a sense of where an animal ranks relative to her parity cohort.

Calculated values are available in some dairy records programs to help make decisions on repair or replacement of animals. In DC305 these include Relative Value, CowVal and Health Index among others.

Relative Value ranks cows in the herd based on ME305 milk performance where 100 is the average animal. The relative value at previous dry off is easily accessed and can serve as a quick guide to where an animal's production ranked at that time in the past. Bear in mind her future production potential may no longer be what it was 2 months ago or even yesterday. Also, it is important to note that RELV does not value components.

CowVal generates an estimate of the present value of a given cow relative to an average fresh heifer in the individual herd. It factors in level of production, pregnancy status, cell count and other factors. In its original iteration, components were not a part of the calculation of production value. There are newer versions that do attempt to value solids. For CowVal to be used, a number of economic variables related to milk and cull prices need to be kept up to date. Some argue that the CowVal model slants toward excessive culling. There is healthy debate to be had over the ideal productive lifespan of a dairy cow, and the answer may be different in the hands of different producers.

Health Index increases as the number of disease events increases relative to herdmates at similar stage of lactation. This figure can be a useful snapshot summarizing information you might otherwise aggregate manually by paging through past lactation cow cards.

## Procedures

It may be said that the best method of LDA correction for each individual practitioner is the method they are most comfortable and experienced with. However, it is informative to periodically review and reconsider other options to keep up with innovations and learn from the experiences of others. Preferred techniques vary regionally and between practices, as well as a wide range of client expectations for assistance, cost and postoperative complications.

Flank celiotomy can be performed on either the right or left paralumbar fossa. Flank celiotomies are quick to prep compared to methods requiring recumbency, but can be difficult in the case of a shorter practitioner with a larger patient. Right flank celiotomies do not allow easy access to the majority of the abomasum so they are not a great choice for surgeries that involve ulceration or adhesions.

If you must operate on an animal with complications (emphasis if you must) consider a left flank or right paramedian approach to facilitate better access. Left flank can also be a good

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option for heavily pregnant cows. However, these atypical cases should be scrutinized for underlying risk factors prior to undertaking surgery. Left flank procedures require a long reach as well due to the need to pass the pexy through the right paramedian body wall. An assistant may be advantageous for surgeons inexperienced in this method to help indicate the proper location for pexy. Failure to do so can result in inadvertent puncture of mammary vessels. The left paramedian technique carries a higher risk of fistulation due to the pexy passing through the full thickness of the ventral body wall.

In general practice, right paramedian celiotomy appear to be favored predominantly by graduates of several eastern veterinary programs and their trainees. It is also a preferred technique among shorter practitioners who struggle with the long reach required for flank celiotomy techniques. This approach allows exceptional access and visualization of the abomasum. Drawbacks include risk of aspiration due to dorsal recumbency, the physical effort required to place a cow in dorsal recumbency, and risk of catastrophic herniation in cases of incisional complications. It is generally not feasible for one person to situate a cow for this technique without assistance.

Roll-and-tack or roll-and-toggle methods have been successful in the hands of experienced practitioners. Provided with an assistant (ideally 2 assistants) to help roll the cow, time on and off the farm may be cut to one-half of that required for a routine

celiotomy. Cost is commensurately lower. Lack of visualization of the site to be pexied is a drawback, and full thickness pexies or toggles carry a risk of infection or even fistulation. This method is increasingly performed by non-veterinarians. There is a lower barrier in terms of required equipment and anatomical orientation. Some misperceive that roll-and-tacks are simple for a layperson to perform, although most veterinarians would agree that the nuance required to ensure consistent results is challenging for amateurs.

Laparoscopic DA correction can be performed using the left flank or right paramedian approach and many report quicker procedures, faster recovery times and lower complication rates using this technique. The drawbacks are cost of equipment and time and expense of sterilizing equipment between cases. If a premium price is not an option for these procedures it may be difficult to justify the equipment cost and cleaning requirements.

No one of these procedures can claim preeminence. All practitioners are likely to settle into certain habits and preferences that will persist throughout their career. Review of the breadth of options may offer opportunities to modify or revisit your own choice of procedure.

