

The F.A.Q. page has been divided into 3 general categories, which address the following topics: (1) Pre-Toggle Considerations/Observations, (2) Suggestions for Improved Technique and Results, and (3) Post-Toggle Concerns/Observations.

Pre-Toggle Considerations/Observations

1. Q: What do I do if I have the cow in dorsal recumbency and I cannot hear a 'ping' with my stethoscope?

A: Apply pressure in front of the cow's udder. You might even let a person stand on the cow's belly. If you have a gas filled abomasum, it will move cranial and you should be able to hear the abomasal 'ping'. Based on our experience, we often trocarize a cow without checking for a 'ping'. In cases with little detectible gas in the abomasum, and concurrent poor rumen fill due to an off feed diagnosis, the percussion/auscultation of the abdominal wall does not produce much 'ping' or resonance. We recommend that you trocarize the cow anyway, but only insert the toggle if gas is then detected.

2. Q: I have a 6 month pregnant cow with an LDA. Can I do the toggle suture procedure on her?

A: It is best not use this technique on mid to late state pregnant cows. We rarely perform the toggle repair after the 5th month of pregnancy.

3. Q: One of my colleagues and I have discussed the toggle suture procedure and he proposed that the technique could also be used for RDA cows. Do you have any experience with this idea?

A: We do not recommend the toggle suture repair for RDA cows because many cases involve a torsion of the abomasum. We have heard of cases of RDA dilatation treated with the toggle, but no systematic evaluation of the results exists.

4. Q: What is the most common reason for a failure when performing an LDA toggle suture repair?

A: For us, the most common failure is lack of gas in the abomasum, which makes penetration of the abomasum impossible when the cow is in dorsal recumbency.

5. Q: In your opinion, which cow would be the prime candidate for an LDA toggle suture repair?

A: In our practice, we consider any cow in the herd a potential candidate for LDA toggle suture repair. However, cows with suspected peritonitis, hardware disease, fatty liver, or pregnancy beyond 5 months gestations are not generally recommended for the procedure.

6. Q: Could you describe the characteristics of some LDA cows that you would not recommend for a toggle suture repair?

A: Long term pregnant cows, cows with severe ventral edema, cows with fatty liver, cows with severe respiratory problems, and cows with extremely poor body conditioning with several concurrent diseases, do not make ideal candidates for the toggle repair.

7. Q: When reading the instructions for performing the LDA toggle suture repair, it suggests that the surgical area be clipped and scrubbed, and also a local anesthesia be administered. I have done that in the past, but by the time I am ready to do the toggle, I can no longer hear the 'ping' and find the abomasum. Is it really necessary to do all of the presurgical preparations?

A: It is left to the discretion of the surgeon as to how much presurgical preparation is done. Many surgeons just make sure that the incision site is clean and disinfected. We do not really feel that the abomasal gas escapes after 4-5 minutes with the cow in dorsal recumbency. Remember that prolonged time in dorsal recumbency may increase the chance of regurgitation and respiratory compromise.

Suggestions for Improved Technique and Results

1. Q: Over the past 3-4 years I have done about 10-15 toggle suture LDA repairs, but I am not really satisfied with the results? What can I do to become more successful?

A: Two factors might explain your situation. You might be placing the suture in too far caudal or you might also be pulling the sutures too tightly. Both factors can greatly influence the outcome. It is also important to select your toggle candidates well. Best results occur when the LDA is detected and corrected early, as soon as she goes off feed.

2. Q: Over the years I have tied many toggle sutures really tight, but a colleague told me that if I leave a few fingers of space between the cow and the knots that the cow will do much better. Is there any explanation for this?

A: Your colleague is right. Cows do better if the sutures are pulled lightly, and adequate space is left between the knots and the cow. The explanation is that the abomasum "floats" easier to its normal anatomical position in the abdominal cavity. Fibrous adhesions are formed around the sutures, holding the abomasum in place.

3. Q: Sometime when I perform the toggle suture repair I am confused because I can hear the abomasal 'ping' over a large area when I have the cow in dorsal recumbency. Where would you recommend that I place the toggle suture under these conditions?

A: I insert the toggles in the cranial portion of the 'ping' or at the recommended site for trocarization as described in the Step-By-Step LDA Repair. The toggles will then be placed in the greater curvature of the abomasum, which is the correct anatomical position, and not too close to the pyloric area.

4. Q: I had a real problem today while attempting a toggle suture repair. The first toggle went in very well, but I just couldn't get the second toggle in and I couldn't detect any abomasal gas. What should I do in this situation?

A: This is a difficult situation. It has also happened to us over the years. If you can not get the second suture in place, one option is to leave it in the abdominal cavity as if it were tied in. Tie the two suture strings together and you will still have the abomasum in place as a result of the first suture. If you are uncomfortable with this situation, then you have to cut the first suture, return the cow to standing position, and then proceed with a flank laparotomy.

5. Q: Personally, I have great success with the toggle suture method of LDA repair, and I don't treat my cows post surgically with antibiotics? Do you think this is alright?

A: We always recommend postsurgical antibiotics, but we are also aware that some practitioners do not follow these guidelines, because they consider the procedure 'non-invasive'. We strongly recommend postsurgical antibiotic treatment, however, it really depends on the comfort level of the attending surgeon.

6. Q: Sometime when I do toggle suture repairs I have a hard time getting the air flow out of the abomasum. Could you please provide me with some explanation for this?

A: Some cows have very little gas in the abomasum, and even when you apply pressure on the abdominal wall, the area for trocarization is rather small. In these cows, only a little gas will escape through the cannula. Another explanation for no air flow is the skin plug which could block the cannula. Occasionally, ingesta can block the cannula. Always keep the push rod in the cannula when you penetrate the abdominal wall.

7. Q: You might find this a silly question, but does it matter which toggle suture you put in first, the anterior or the posterior?

A: The first toggle suture should be the most posterior. When the first suture is in place, it is easier to move forward with the second suture because the trapped gas in the abomasum 'floats' upward and forward. Remember to apply pressure in front of the udder to ensure the gas filled abomasum moves forward.

8. Q: Sometime when I am doing the toggle procedure the abomasal 'ping' will not move to the right position...right side and anterior. Would you recommend that I do the toggle suture procedure anyway if the 'ping' is to the left of the midline, or very much posterior and on the right side?

A: In most cases you can move the cow from side to side and get the 'ping' to be to the right of the midline. Try to put a lot of pressure in front of the udder. You might even let a person stand on the cow's belly to push the abomasum forward. We have had cases where we have trocarized the abomasum very caudal, and the cows have recovered satisfactorily. However, it is better to place the first trocar perforation in the correct anatomical location, 10-15 cm caudal and 4-6 cm to the right of the midline.

9. Q: What is the significance of letting the gas off from the abomasum when you do the toggle repair?

A: Let the gas off after the second toggle suture is in place. The significance is to try to minimize or to avoid the sutures pulling on the abdominal, as well as the abomasal wall, when the cow is allowed to stand. With a lot of gas accumulated in the abomasum, the organ will float up higher and the sutures will put pressure on the abomasal mucosa.

10. Q: I am a little reluctant to do a toggle suture repair because I feel it takes too much help to get the cow into dorsal recumbency. How many assistants are necessary to safely perform this procedure...1 or 2 helpers, and do you tranquilize the cow prior to treatment?

A: It is easier to perform this procedure if 2 persons are helping, but for many practitioners, only one assistant is necessary. If the cow is depressed, we never use a tranquilizer. When tranquilization is given, we prefer to use 20-50 mg of xylazine to sedate the cow. The decision to tranquilize is often based on the disposition of the cow. The more fractious she is, the more likely she is going to be a candidate for tranquilization.

11. Q: Why do toggle sutures work so well? Is it the holding power of the sutures, or is it a result of local peritonitis with adhesions holding the abomasum in place?

A: The sutures create small adhesions or ligaments between the abomasum and the ventral abdominal wall, holding the abomasum in its normal anatomical position.

12. Q: My problem on the farm is getting help when we pull the cow down to perform the toggle suture repair. 50% of the cows lie down on the right side and 50% lie down on their left side. Can I just roll the cow into dorsal recumbency from either side, or is it a must that the cow should be on her right side and then rolled in a clockwise manner to dorsal recumbency?

A: It is absolutely essential that you cast the cow on her right side and then roll her to dorsal recumbency in a clockwise manner. Otherwise the abomasum will not float to its normal anatomical position and you will not be able to toggle the abomasum.

13. Q: How sure can you be that you hit the abomasum when toggling a cow? Could the air coming from the cannula not be rumen or intestinal gas?

A: After performing very few abomasal surgeries you will know the distinct smell of abomasal gas. If you are uncertain, you can check the pH of the abomasal fluid by aspirating some of the fluid with a catheter.

Post-Toggle Concerns/Observations

1. Q: I did a toggle on a cow two days ago, and today the cow is doing poorly? What could the problem be?

A: The cow could be sick due to concurrent diseases such as ketosis or metritis. If the cow has been off feed for an extended period, decreased rumen function could be the problem. The toggle pins could also be the explanation. The cow could have a local peritonitis. The pin could be in too close to the pyloric area, giving ingesta flow problems. If no diagnosis can be established, we recommend that you remove the sutures and perform a flank laparotomy on the cow to establish a precise diagnosis and/or correction if possible.

2. Q: Do you have to remove the toggles (cut the knot off) 2-3 weeks post surgically like you would remove sutures from other surgical sites?

A: Personally, we do not remove the sutures. When we leave them in they might cause some tissue reaction, but it is usually normal. Practitioners who cut the sutures after 2-4 weeks have reported an occasional redisplacement of the abomasum. We recommend that the sutures should not be removed, unless they are causing an obvious problem.

3. Q: The other day I visited a farm and saw a toggle hanging under the belly of a cow that I treated for LDA 3 months ago. Is this something to be concerned about?

A: Now and then, the sutures come out after the abomasum has adhered to the abdominal wall. When it happens, we usually cut or pull softly on the suture to remove it. If it is left in place, dirt or manure could adhere around the toggle, although this is generally not a major concern.

4. Q: Occasionally I have a nasty swelling around the trocarization site on my toggled cows. What is the significance of this swelling, and should I be concerned?

A: Some swelling is acceptable and a normal consequence of the surgery. You could have a local cellulitis or an abscess could appear at the penetration site. It is also possible that a large vein was damaged, causing a hematoma or

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5. Q: Last week I performed a toggle suture repair and the cow died 7 hours after the procedure. Did I fail to toggle the abomasum, or did I penetrate another structure such as the liver, an artery, or the intestine?

A: No, you did not do anything wrong. It is our guess that the cow died from a peracute clostridial intoxication. Over the years, we have experienced the same situation a few times. The cow might have diarrhea prior to surgery, or not be vaccinated against clostridia. We have never seen such cases in Europe; only farms in the USA have reported this complication. While not 'common' in the USA, it is not a 'rare' occurrence either. Clients should be warned ahead of surgery of this possible complication, even if the cow has a current clostridial vaccination.

6. Q: Is it possible to do a toggle repair and still have the abomasum displaced when the cow is standing?

A: Dr. Grymer has had one case where the abomasum was redisplaced the following day. A right flank laparotomy revealed the abomasum was sutured properly, but part of the fundic part of the abomasum was still able to dislocate due to severe atony of the abomasum. A right flank omentopexy was performed. Dr. Sterner has seen the same thing happen in a limited number (5 or 6) of cases.

7. Q: How soon after surgery would you expect to see the cow standing? Does it mean anything?

A: Cows that are pulled down by a rope will usually stand right after surgery. Cows that are given a tranquilizer will generally get up within an hour after surgery. We feel it is a good thing that cows get up slowly. While lying in sternal recumbency, gas in the abomasum will escape and there will be little or no pulling on the abomasum when the cow does get up. Similarly, the gas will escape within a few minutes if the preoperative tranquilizer was xylazine, and it was reversed post-operatively with tolazoline.

8. Q: How soon after doing a toggle suture repair can you slaughter the cow, if necessary?

A: We never recommend the slaughter of the cow sooner than 30 days after surgery. There will always be some tissue reaction around the sutures, creating adhesions, and that process is rarely finished in less than 30 days post surgically. This will also depend on the meat withdrawal times posted for the pharmaceuticals used to treat the cow in the first place for concurrent diseases.

9. Q: Would you recommend a toggled cow be bred back again, or should she be salvaged at the end of her lactation?

A: Studies have shown that toggle treated LDA cows breed back as well as 'controlled' cows. One study demonstrated that 50% of the LDA toggled cows calved again, and that results were equivalent to controls within the herd. Many farmers like to breed back their LDA cows because they tend to be good milkers.