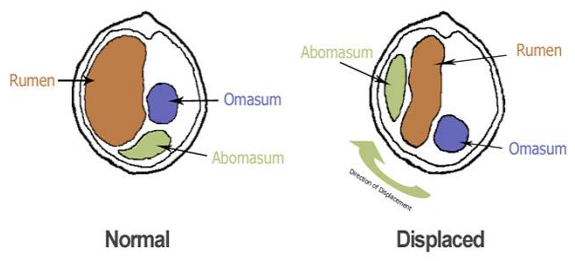
NEWSLETTER September 2017- LDA Surgical Technique

Most of you will have seen us performing LDA or RDA operations at some point but you may not be aware of what is going on while our arm is inside the cow.

This newsletter will explain what we are doing when we correct an LDA (although you are not recommended to try it at home after reading!)

Anatomy

In an LDA the abomasum, which is the last compartment of the cows 4 stomachs, swings up from its normal position slightly to the right on the base of the abdomen to sit between the body wall and the rumen on the left hand side. This means the cow can't digest food properly and just feels generally uncomfortable, hence the clinical signs we see. The surgery aims to move the abomasum back to the correct position and anchor it in place.



Cross section of the abdomen from a rear view.

Preparation of the cow

We give the cow Metacam and Pen and Strep. This provides her with pain relief and antibiotic should there be any contamination in the surgery. Many small animal and human surgeries nowadays are performed without the use of antibiotics, however on farm it is difficult to maintain perfect sterility so we always cover with antibiotics, just to be on the safe side. The Metacam is given at the start as it is more effective if administered before the pain occurs.

The area for surgery is clipped. We then use local anaesthetic to perform a block. There are various different nerve blocks which can be used, we use a line block. This involves injecting anaesthetic at various points down the line of incision and infusing it through all muscle layers and under the skin.

The surgical field is then prepped- we use Hibiscrub to clean the cow- at least 5 minutes contact is required to kill all the bacteria so this always takes a little while. The site is then rinsed with surgical spirit to enhance sterility.

Preparation of ourselves

We then scrub our hands and arms to make ourselves as aseptic as possible. Once we've done this we can't touch anything that isn't sterile! The gowns we wear have also been sterilized in order to reduce the risk of introducing any bacteria into the cow.

Incision

We then incise the skin- this requires a bit of pressure as it is pretty thick.

Geth making the incision

There are 3 muscle layers in the body wall so we use the scalpel and scissors to cut through these, and the peritoneum which is the thin layer that covers the inside of the abdomen.

During this stage it's really important to pull the body wall outwards to avoid nicking any of the gut with your scalpel/ scissors.

The whoosh of air you hear when we cut into the abdomen is because it is at negative pressure, so air rushes in once you enter the abdomen.

Correcting the displaced abomasum

There are various different surgical techniques which can be used for treatment of LDAs- the technique we use is a 'Right Flank Omentopexy.'

Once the incision has been made, we put our left arm into the abdomen, and firstly come across loops of small intestine sitting in front of the rumen.

We then reach around the back of the greater omentum, which is a big sheet of connective tissue which holds the guts in place, and reach down the left hand side of the rumen, which is right next to the left hand body wall. Reaching forward, it is possible to feel the inflated abomasum between the rumen and the body wall.

At this point, we use a trochar attached to a flutter valve to deflate the abomasum. Sometimes this is not necessary if the abomasum isn't too inflated, or if you have long gorilla-like arms and can push it round manually (Ed!).

Once deflated, the abomasum falls away towards its normal position on the base of the abdomen.

We the reach down the right hand side of the body wall to the level of the sternum and grab the omentum which is in this area.

This is then pulled up to the level of the incision, and we continue to pull the omentum up until the pylorus (the end section of the abomasum) is visible. Another landmark to look for in this area is the 'Sows Ear', which is a flap of omentum located close to the pylorus that, as the name suggests, looks like a pigs ear.

Geth trying to locate the pylorus

This is when we ask you to attach the clamps. We then use cat gut, which is an absorbable suture material, and stitch the omentum into the first layer of the body wall. We include the peritoneum and first muscle layer in the first layer we close, and it is important to get as tight a seal on this as possible to close the abdomen.

Next, we close the second two muscle layers with a continuous suture pattern before closing the skin. The pattern we use for that is called a 'Ford Interlocking' and it produces slightly less tension on the skin than other suture patterns.

Finally, the surgery is finished off with a layer of Engemycin Spray to help prevent skin infection.

Does it work?

We keep a record of all the surgeries we perform and chase up the short and long term recovery quarterly and the average success rate is around 90%.

Hello, Goodbye and Welcome Back!

We have a few staff changes taking place over the next month. Kat will be returning from maternity leave following the birth of her little boy Freddie back in January.

We will say goodbye to Andres as he heads up North to work in the Peak District as a TB tester and clinical vet.

Georgie David will be joining us to replace Andres as a TB tester- many of you will have already come across Georgie - she has spent a lot of time on placement here over the last few years. She will also be doing on call work and clinical work on a Wednesday. We look forward to welcoming her to the team.

Thanks very much, Sarah