Lap Spays

A picture guide to what happens during keyhole surgery

Laparscopic Surgery

Keyhole Surgery - the future of all surgery!

Keyhole Surgery or Laparoscopy refers to surgery performed through very small incisions, usually 1cm long, using a camera system called a laparoscope to see inside the body and perform surgery. Through these small incisions the surgeon can see all of the internal organs more clearly than with conventional surgery.

This type of minimally invasive surgery has been performed on people (the most common is gall bladder removal) since the 1990's but is is only recently that it has entered the veterinary world.

Surgery is performed by introducing one or more instruments into the body cavity and using the images from the camera on a TV screen to guide the surgeon.

We have been overwhelmed with the interest shown in this procedure and thought you might find the following pages interesting.

Warning! This book contains a photo diary of one of our patients undergoing a laparoscopic bitch spay. These are "warts and all" photos and do show images of internal organs and the actual operation itself although as the photos show it is a relatively bloodless surgery.

Meet Lexie

This photo diary will follow bouncy Lexie through her day at Oak Barn Vets whilst she is being spayed.

As you can see she is a fit young Alaskan Malamute not known for being good at resting!

As a breed they need lots of exercise. So keyhole surgery is perfect as the minimum post op rest time is required after her procedure.

Lexie has a full clinical exam with close auscultation of her chest and a weight check to allow for accurate anaesthetic dosing.

A premed and pain relief are given by injection before her anaesthetic. This makes her sleepy so less anaesthetic is required and pain killers are much more effective if given before a painful stimulus.

Intravenous Catheters

All our patients have an intravenous catheter placed for an anaesthetic. This gives instant access to the blood stream for medication but best of all means no more injections once placed!

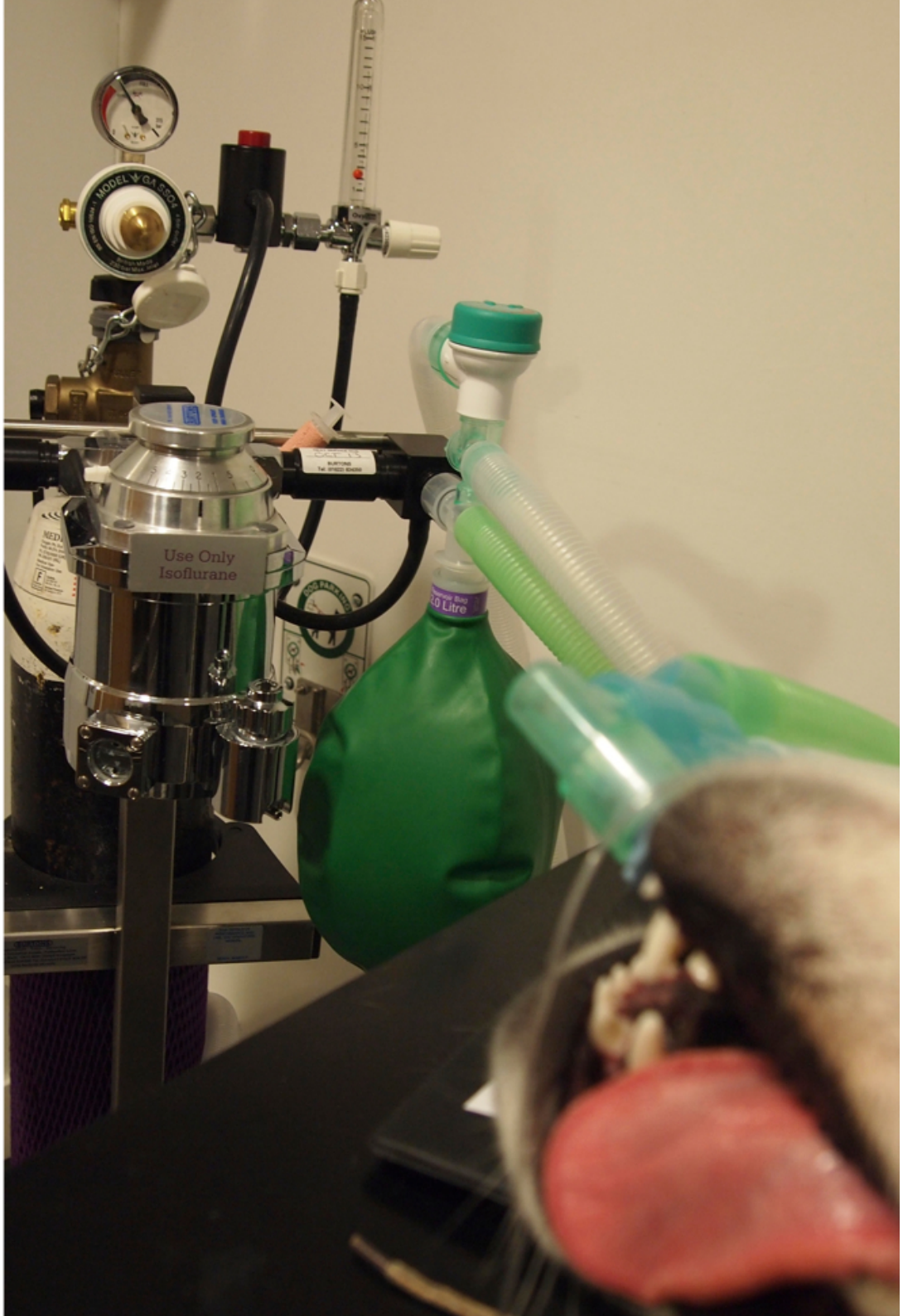
Preparing for surgery.

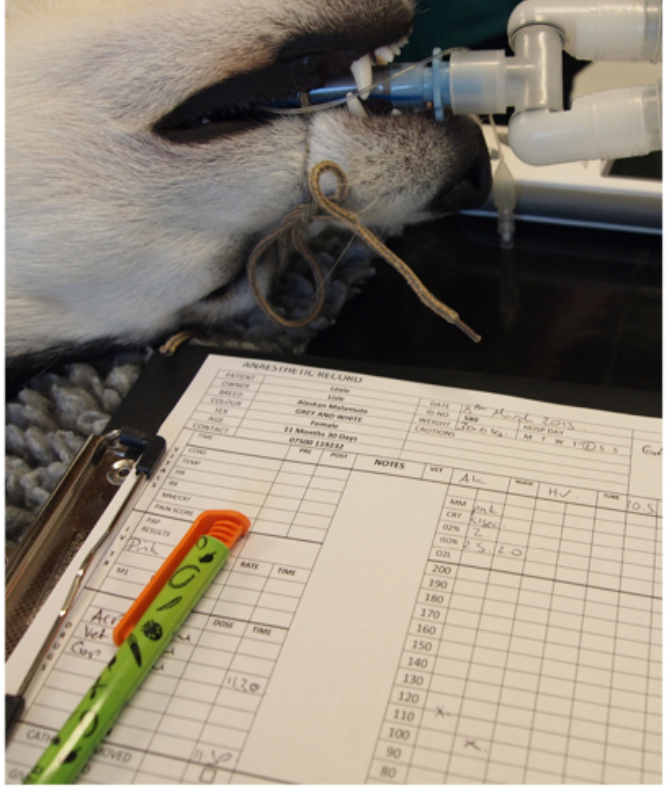
High tech anaesthesia.

Once the premed is working Lexie is given an injection to induce the anaesthetic, via her intravenous catheter.

This renders Lexie unconscious and a tube is then placed in her airway and we add an anaesthetic gas to pure oxygen. This means as she breathes she takes the correct amount of gas to keep her asleep throughout the procedure.

Once the operation is completed the anaesthetic gas is turned off and she wakes up!





Close monitoring and aseptic preparation

Throughout her operation Lexie is closely monitored. The whole of her abdomen is clipped and prepared to ensure there is little risk of contamination with hair or infection.

The surgical field is cleaned with a surgical antiseptic scrub.

The monitoring probe attached to her tongue is a pulse oximeter. We use this on all our patients - it tells us how much oxygen is present in the blood stream and is an important indicator of how well her cardiovascular system is working throughout the anaesthetic.

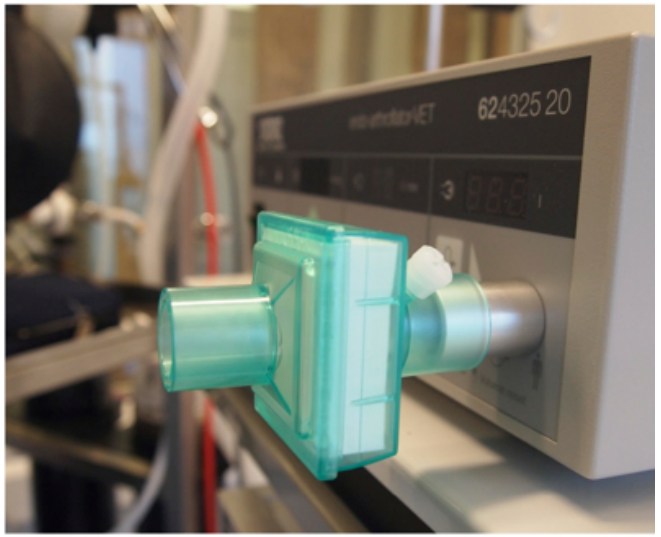
Transfer

All our patients are prepared for surgery outside of the theatre.

This keeps theatre as clean as possible to improve asepsis.

Patients are transferred on trollies just like with people!

This is not only to protect our backs but also means that Lexie is as comfortable as possible on recovery.



Laparoscopy Kit

Laparoscopy requires a lot of equipment for such small holes!

The Laparoscopic kit is prepared before the anaesthetic begins. The tower contains the monitor, carbon dioxide insufflator, camera unit and light source. The camera can be seen in the top picture and is the most expensive piece of equipment!

The green filter below is changed between patients and ensures that there is no possibility of germs transferring between patients


X-rays
Do not enter when
red light is on

Sterility is vital

We do not routinely give our patients antibiotics when they have surgery.

This is because we have rigourous aseptic techniques.

Andrew can be seen here scrubbing up and then ‘dressing’ with a sterile gown that has been heat treated in an autoclave to render it sterile. The plastic bag then protects it from the outside world and potential germs.

Surgical gloves are used and the surgical kit is unpacked. Again from sterile bags which have been autoclaved.

Tiny surgical instruments

The laparoscopic instruments are long and thin, designed to be used through ‘keyhole’ ports guided by a camera. Basically like very technical chop sticks!

The ‘gun’ you can see to the left is a vital very clever piece of equipment - it cleverly holds tissue and then uses electrocautery to seal blood vessels before then allowing you to cut through the tissue.

This results in bloodless surgery and minimal tissue handling. Advantages of this are that the procedure is quick and with less tissue handling, less nerves are damaged and thus less pain!

Drapes

Now that Lexie has a sterile abdomen from all the cleaning in prep.

She has green sterile drapes placed around the operation site to ensure the utmost sterility.

Now we are ready for surgery!

Placing the probes

Where the two tiny keyhole incisions are to be made we first inject local anaesthetic to numb the area. This means our patients are as comfortable as possible post operatively.

A spring-loaded needle is placed in the first hole - this is then connected to the tower and carbon dioxide is slowly pumped into the abdomen, inflating it to give the necessary space to perform her surgery.

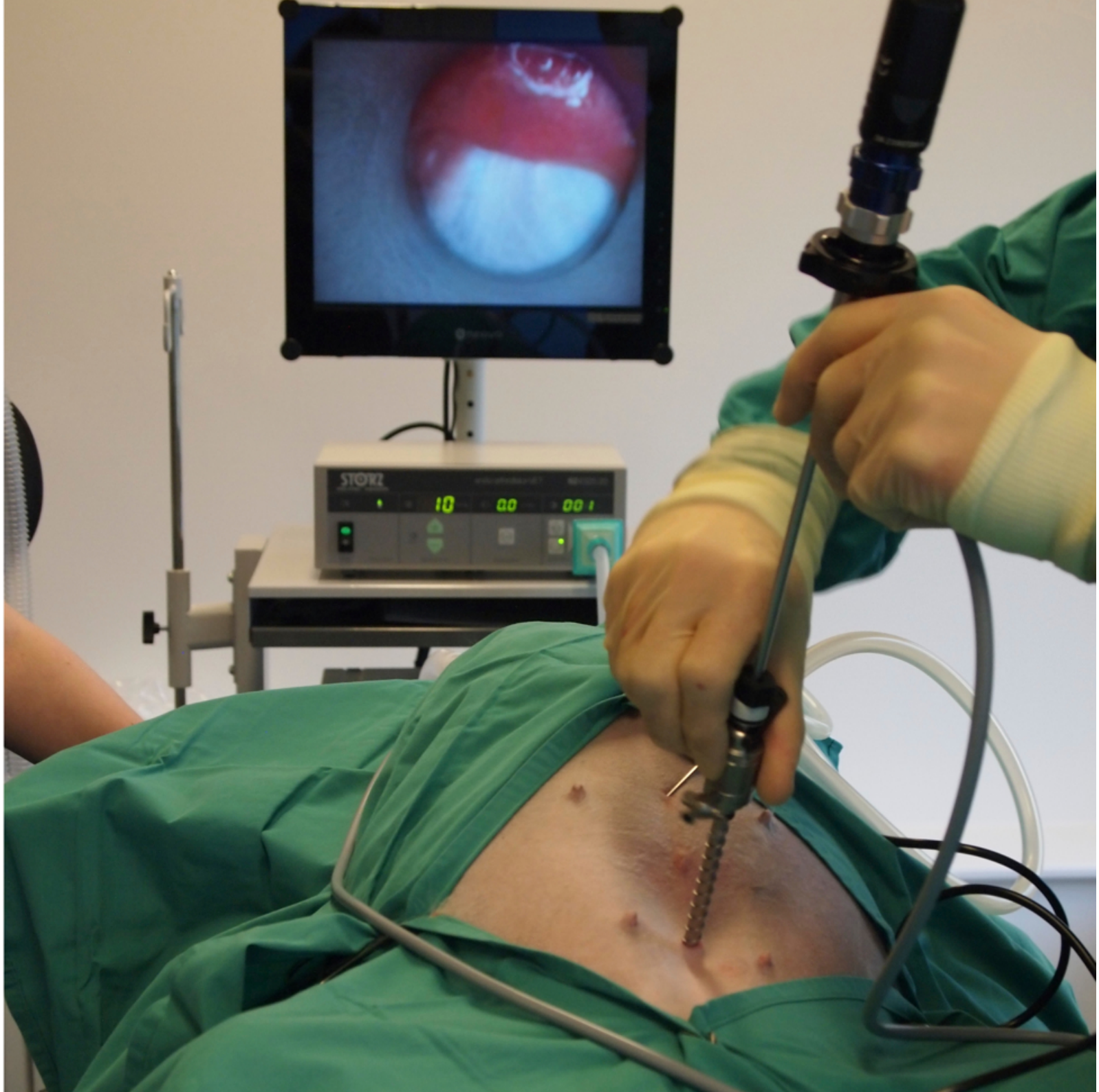
Once the abdomen is inflated the second keyhole probe is placed. As you can see in the bottom photograph - the probe is in place and you can see the light through her abdomen wall!

Amazing visualisation

During the placement of the equipment the surgeon can see everything on the large monitor on the tower.

This actually allows you to visualise the abdominal organs more closely than you can do by conventional surgery.

On the monitor you can see the outside of the peritoneum when first entering the abdomen.



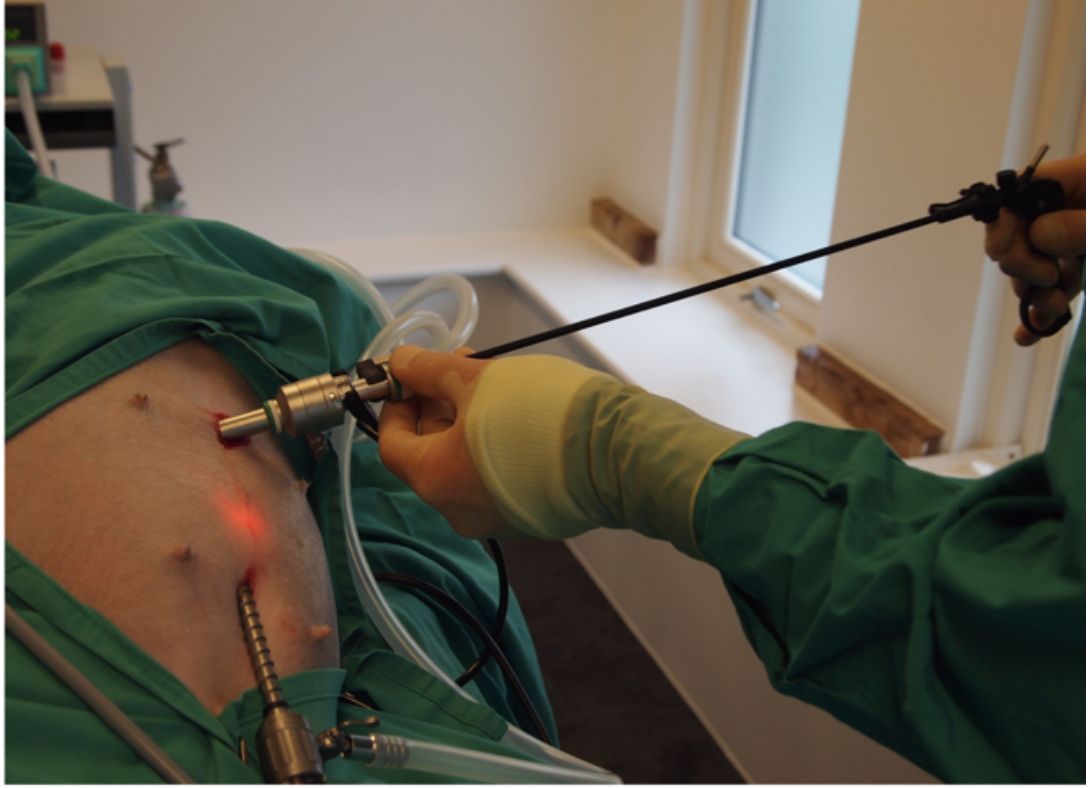
Close inspection

The surgeon has a good look at Lexies abdominal organs.

With this technique spaying involves removal of the ovaries only unless there is evidence of any problems with the uterus itself. If there is a problem with the uterus it can be removed at the same time via keyhole surgery but will involve three holes rather than two in the abdominal wall.

You can see how clear the organs are - even the small blood vessels on the bowel are visible .


Press to select the preferred video mode
Press for 3 seconds for optimal settings



Ovary removal (ovariectomy)

Everything is normal in Lexie's abdomen so Andrew prepares to perform the ovariectomy. Hazel slowly rotates the operating table so that it is easier to grasp the right ovary.

A small forcep is placed into the abdominal cavity and the ovary is grasped and secured.

Cautery and resection

Now its the turn of the cautery equipment - that special 'gun' you saw earlier.

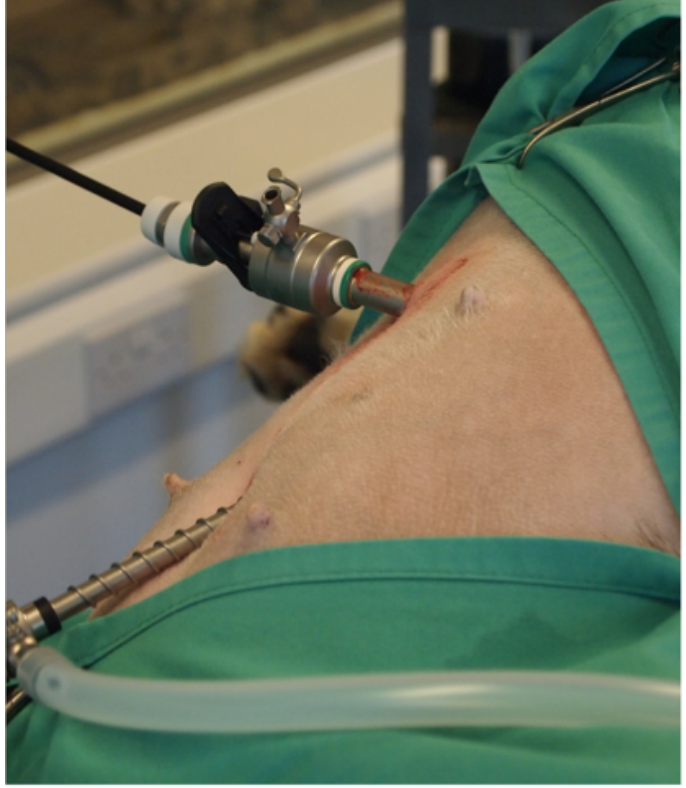
It heat seals the vessel and cuts through the pedicle thus releasing the ovary for removal.

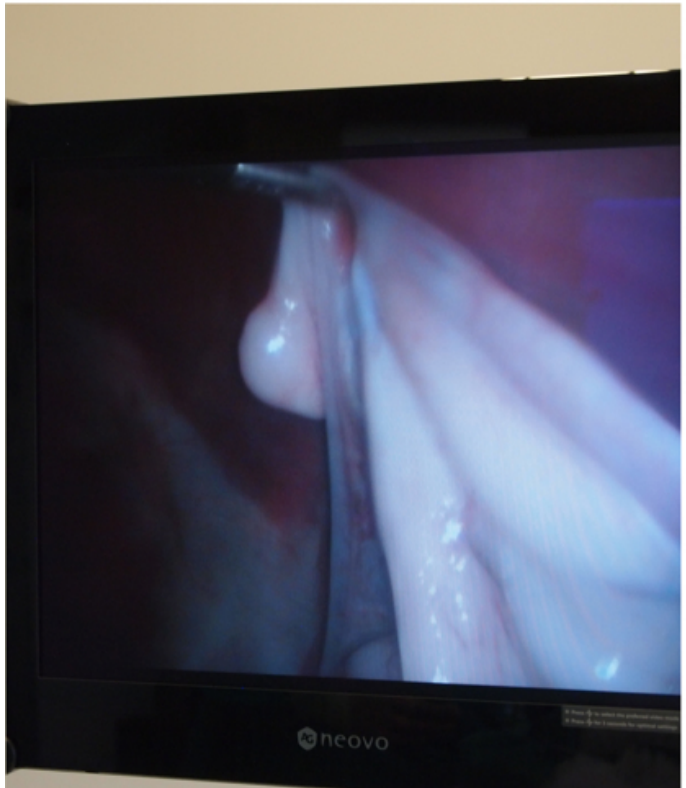
As you can see there is no blood shed as the blood vessels are sealed before they are cut.

Ovary removal

Once the ovary has been cut free from the pedicle and uterus it is then removed via the small incisions that the laparoscopy equipment were placed through.

The same procedure is then performed on the other side.




neovo

Nearly finished!

As you can see above both ovaries have been removed.

Now the small holes are repaired with dissolvable sutures in the muscle and hidden under the skin. There is no need to remove these sutures.

The holes are smaller then a 5 pence piece!

With the operation over the anaesthetic gas is turned off and Lexie wakes up in recovery.

All done!

It doesn't take long for Lexie to be wide awake!

Although a bit wobbly at first after her anaesthetic, she has soon been outside to the toilet and is keen to eat her chicken and rice, hungry after no breakfast! Once she is up and about and has eaten we are always happy for our patients to go home as soon as possible.

With all our surgeries she is going home with some anti-inflammatory pain relief for the next couple of days but no lampshade collar required! Lead exercise is best for the first 48 hours but after her post op check only two days later she is allowed to be off the lead and back to her usual ways!

The best thing about these keyhole procedures is that our patients don't seem to remember they've even had surgery as you can see Lexie still likes to give us some fuss !

Tilehouse Barn
East Shalford Lane
Guildford
GU4 8AE
www.oakbarnvets.com