



## Standing Equine Laparoscopic Ovariectomy



The term "ACVS Diplomate" refers to a veterinarian who has been board certified in veterinary surgery. Only veterinarians who have successfully completed the certification requirements of the ACVS are Diplomates of the American College of Veterinary Surgeons and have earned the right to be called specialists in veterinary surgery.

Your ACVS board-certified veterinary surgeon completed a three-year residency program, met specific training and caseload requirements, performed research and had research published. This process was supervised by ACVS Diplomates, ensuring consistency in training and adherence to high standards. After completing the residency program, the individual passed a rigorous examination. Only then did your veterinary surgeon earn the title of ACVS Diplomate.

### Overview:

Many techniques of ovary removal have been described including removal under general anaesthesia through an incision on midline through to removal standing via an incision in the uterus through which a device that crushes and cuts the pedicle of the ovary is used. However, with the advent of laparoscopic (keyhole) surgery, the gold standard technique is laparoscopic ovariectomy in which the ovary is removed from a standing, sedated horse, through a small incision in the flank. This technique is both minimally invasive, avoids risks of general anaesthesia and cosmetically very acceptable and therefore makes all other approaches inferior.

### Signs and Symptoms:

The most common reason for ovariectomy is removal of an enlarged ovary usually as a result of a type of benign tumour called a granulosa thecal cell tumour (GTCT). These are diagnosed normally because the mare starts to exhibit signs of aggression towards other horses or even stallion like tendencies. She will normally fail to come into season or remain in persistent season. Once the affected ovary is removed, mares can be successfully bred with a normal functioning remaining ovary.

Another reason ovaries are removed are for mares who show persistent signs of oestrus (in season) and for whom other medical interventions have been short lived or unsuccessful. This is a controversial indication for ovariectomy and there are differing opinions as to the success of the procedure for such mares.

### Diagnostics:

Diagnosis is based off of clinical signs, palpation and/or ultrasound per rectum of the reproductive tract and

sometime submission of blood work evaluating circulating levels of estrogen and testosterone.

## Treatment:

Many techniques of ovary removal have been described including removal under general anaesthesia through an incision on midline through to removal standing via an incision in the uterus through which a device that crushes and cuts the pedicle of the ovary is used. However, with the advent of laparoscopic (keyhole) surgery, the gold standard technique is laparoscopic ovariectomy in which the ovary is removed from a standing, sedated horse, through a small incision in the flank. This technique is both minimally invasive, avoids risks of general anaesthesia and cosmetically very acceptable and therefore makes all other approaches inferior.

**PRE-OPERATIVE PREPARATION:** Because the ovaries lie in the abdomen where the gastro-intestinal tract is, it is important that the gastrointestinal tract is as empty as is possible to allow good visualisation of the ovaries which lie suspended from the back of the horse far back towards the pelvis. Therefore horses usually have feed withheld for between 24 and 36 hours prior to this procedure. They are still offered access to water at all times.

**LAPROSCOPIC OVARIECTOMY:** The mare is sedated and placed in stocks. The hair on the flank on the affected side is clipped and sterilely prepared prior to being blocked with local anaesthesia. There are usually three small (1.5cm) incisions made in the region and then specialised trochars are introduced into the abdomen which allow the introduction of the camera to visualize the internal structures (Figure 1) and then instruments (Figure 2) that are designed to hold and then cut the attachments of the ovary to the body wall whilst sealing the blood vessels that supply it (Figures 3 & 4). The abdomen is usually insufflated with CO<sub>2</sub> gas which allows the best visualisation of the ovary and its attachment to the body wall. Once all the attachments have been dissected and the ovary is free it is brought to the inside of the body wall and one of the incisions is extended slightly to allow removal of it through the body wall. If the ovary is very large then it may need to be cut up inside the abdomen prior to it being removed and it may require a larger incision for removal. Sometimes there is a lot of fluid within the tumour and this can be aspirated first prior to removal. Once the ovary has been removed and the remaining tissues checked to ensure they are not bleeding, the incisions are usually closed in three layers and the skin either stapled or sutured closed.



Figure 1: Laproscopic appearance of normal ovary



Figure 2: The ovary is being grasped and the tissue above is being burnt and cut with a specialized sealing instrument



Figure 3: The tissue above the ovary is being sealed and cut until the ovary is completely freed up

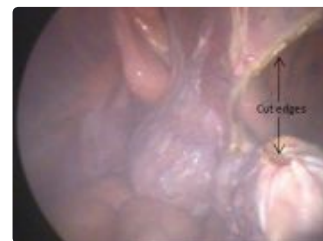


Figure 4: Note the cut edges are sealed and show no signs of bleeding



