THE USE OF EXPLORATORY LAPAROSCOPY IN THE EVALUATION OF THE
HORSES WITH SIGNS OF ACUTE AND CHRONIC ABDOMINAL PAIN
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1. Introduction:
The development of laparoscopy in horses has dependent mainly on the advances in imaging. Endoscopic surgery has become a popular alternative to traditional operative procedures for a variety of medical and surgical problems.

Laparoscopy of the equine patient has created a minimally invasive approach to the abdominal cavity. Initial reports centered around diagnostic laparoscopy of the abdomen and treatment of reproductive disorders (cryptorchids, ovarioectomies) As techniques, instruments and surgeon skills improved, the use of equine laparoscopy has gained valuable acceptance in the veterinary community.

2. Equipment:
Laparoscopic surgery requires the use of special equipment. As a result of the large size of the equine abdomen, a 300 watts Xenon light source is required to provide adequate illumination for direct visualization. Equine laparoscopes are 10 mm in diameter and are available in 33 cm and 57 cm in length. The viewing angle at the end of the laparoscope is either 0 degrees or 30 degrees offset. The fiber optic light cable should be adequate length and large diameter to accommodate the maximal numbers of fibers for light transmission. An insufflation system, including an insufflator, insufflation gas (CO2), sterile tubing and either a needle or teat cannula for initial introduction of gas into the peritoneal cavity are necessary. An intra-abdominal pressure of 15 – 20 mm Hg is usually required and provides adequate visualization of the intra-abdominal organs and viscera. An insufflator capable of delivering a flow rate of 4 – 9 liters/min is recommended to avoid inefficiency caused by time lost in acquiring and maintaining abdominal insufflation.

3. Instruments:
A basic set of endoscopic equipment for equine surgery should be available and includes trocars, reducer caps, 5-mm instruments (grasping forceps, dissecting forceps, dissecting forceps, 10-mm instruments (atraumatic grasping forceps, dissecting forceps, claw forceps), laparoscopic clip applier, laparoscopic stapling devices, laparoscopic suturing instruments.

4. Indications for laparoscopy:
Abdominal pain in horses is one of the most common presenting clinical signs. Rapid and efficient evaluation of the equine patient is very important, in order to proceed with either medical or surgical management. Most horses presenting to our hospital will be initially evaluated during a routine colic work-up. This colic work-up includes, physical examination, routine bloodwork (CBC with fibrinogen, chemistry panel), abdominal radiographs, abdominal ultrasound, gastroscopy, rectal examination, abdominal fluid analysis. In Most cases, the initial work-up leads to a differential diagnosis with either medical or surgical treatment or a combination of the two.
Laparoscopic evaluation of the equine patient with colic is most commonly used in horses with a history of chronic colic or a low grade of pain or weight loss. All of the horses that are being evaluated for chronic/low grade pain or weight loss will have had an extensive work-up.

In horses with acute signs of abdominal pain, laparoscopy is used not as frequently, because of the increased risk of a distended viscus (gas or feed material). In the acute colic case, laparoscopy is most commonly used in horses with no clear indication for either surgery or euthanasia and in cases in which clients are unable to give permission for an exploratory celiotomy. Abdominal laparoscopy is also used to confirm a diagnosis that would require a colic surgery as treatment or to confirm a localized rupture of a viscus.

5. A short introduction and overview of laparoscopic anatomy of the abdominal cavity will be given.

6. Different causes of acute signs of colic, chronic signs of colic and weight loss will be discussed and cases will be provided with pictures.

References
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