LAPAROSCOPIC MESH HERNIA REPAIR
J.P. Caron DVM, MVSc, DACVS
Michigan State University, East Lansing, MI

Incisional hernias occur in 8-16% of horses after median celiotomy. Several factors can contribute to the development of a postoperative hernia, however the main one appears to be incisional drainage/infection. Diagnosis does not generally represent a diagnostic challenge – typically horses for which treatment is sought have a pendulous protuberance of the abdomen in the region of the previous celiotomy incision.

Existing open repair techniques for incisional hernias are associated with complications paralleling those in human surgery including seroma, infection and recurrence. Minimally invasive techniques for treatment of incisional hernias in people were introduced in the 1990s and many regard laparoscopic repair as the procedure of choice to treat the condition. Laparoscopic mesh hernioplasty offers the potential for reduced duration of hospitalization, fewer soft tissue complications, and lower recurrence rates. It is possible that similar benefits may be realized with laparoscopic mesh incisional hernioplasty in horses.

Horses are pre-medicated with antibiotics, anti-inflammatory medications, anesthetized, placed in dorsal recumbency, and prepared for aseptic surgery. Following abdominal insufflation using established methods, telescope and instrument portals (2) are created distant from the lateral hernia margins bilaterally. The hernia is defined by transabdominal palpation of instruments placed at its edge. Following endoscopic scissor dissection of retroperitoneal fat to expose the internal rectus sheath, an appropriately sized piece of prosthetic mesh, with sutures of #2 nylon attached to its cranial, caudal and lateral extremities, is rolled tightly and introduced into the abdomen. The pre-placed sutures are retrieved using a suture passer introduced into the abdominal cavity through stab incisions corresponding to the desired location of the prosthesis. Although entailing additional expense, supplemental provisional fixation of the mesh is recommended and is accomplished using endoscopic hernia fixation devices placed at 3-4 cm intervals around the entire outer circumference of the mesh. These hernia “tacks” serve to position and immobilize the prosthesis and materially facilitate definitive fixation with additional transfascial sutures of #2 nylon (or equivalent). The latter are placed via 5-7 mm stab incisions (through skin and subcutaneous tissue to the external rectus sheath) at approximately 4 cm intervals around the outer circumference of the mesh. A relatively easy method to place the sutures involves advancing an 18 g spinal needle, introduced via a 5-7 mm cutaneous stab incision, through the body wall and the edge of the prosthesis under laparoscopic control. Once the needle is satisfactorily located, a free strand of suture is introduced into the abdominal cavity through the needle lumen and grasped within the abdomen with a laparoscopic Kelly forceps. The spinal needle is removed and the suture passer, introduced parallel to the original path of the spinal needle at the opposite end of the stab incision, is used to retrieve and exteriorize the intra abdominal end of the suture strand and tie a knot onto the surface of the external rectus sheath. Laparoscopic and transfascial suture incisions are closed routinely. Following recovery, a commercial abdominal support bandage is applied for 45-60 days to support the repair.

Results to date have been encouraging; there have been no major complications and functional and cosmetic results have been satisfactory. Horses treated to date have returned to various levels of athletic activity and one mare has an intact repair after delivering a foal. Early indications suggest that laparoscopic mesh hernioplasty holds promise as a safe and effective method for repair of incisional hernias in horses.
References: