**Hernias Explained**

* By [Nancy S. Loving, DVM](http://www.thehorse.com/authors/32/nancy-s-loving-dvm)

*Bulges in the body wall could mean internal organs are out of place.*

A hernia is any rent or tear in the body wall that allows internal organs to push through into undesirable places. Any age or breed of horse can experience a hernia, and a hernia can occur in just about any location within the body wall.

In this article we'll review some of the more common types of hernias and consider their significance and solutions.

**Abdominal Hernia**

An abdominal hernia can develop for a variety of reasons; the most common occurrence follows abdominal or colic surgery due to loss of integrity along the incision line. A horse that has undergone abdominal surgery, especially colic surgery, often has other complicating health factors that slow healing or potentiate infection.

Gary Baxter, VMD, MS, Dipl. ACVS, a professor at Colorado State University veterinary school, explains, "The number one risk factor for hernia formation after surgery is due to an incisional infection. Any efforts to prevent wound infection will reduce hernia formation."

The choice of high-quality suture materials is also important to increase the holding power of the incision line, as well as to minimize chances of infection around the stitches. An abdominal belt or band helps relieve tension on an incision site during healing and serves as a pressure bandage. Baxter stresses the importance of reducing tension on the incision by limiting exercise until the linea alba (a fibrous band running the length of the abdominal midline) has obtained adequate strength. This can take three to four months after surgery to heal enough that the horse can safely return to rigorous training.

Baxter estimates that no more than 10% of horses develop hernias following abdominal surgery. As few as 5% of horses develop true herniations that require additional surgery. He clarifies, "Some horses will not truly herniate with an actual break in the linea to form a palpable hernial sac. Instead, there may be a little 'sag' along the abdominal midline. This is often due to connective tissue of the linea being thinner than normal, perhaps due to stretching of the linea during healing. In this case, there is no need to do surgery, but the appearance and contour of the abdomen may differ from before surgery."

Baxter says veterinarians should wait at least two months before recommending additional surgery to correct an abdominal incisional herniation; this allows the tissue to get strong enough to hold sutures. He says, "I always try to close an incisional hernia if possible, but this depends on how large it is. A large hernia requires plastic mesh to be placed over the defect."

He says hernia repair doesn't often fail, but there are reasons why it will. He states, "Failure occurs more often when a horse is exercised too early on or if too much tension is placed on the sutures from trying to close an excessively large hernia. Failure of mesh repair is also uncommon, but is usually due to infection of the nonabsorbable mesh."

A horse that has undergone abdominal hernia repair is as likely to return to performance as he would subsequent to any abdominal incision and surgery.

**Abdominal Hernia or Prepubic Tendon Rupture in Mares**

During late gestation, a mare's lower body wall muscles might tear, leading to an abdominal hernia or prepubic tendon rupture (see photo above). An older mare might have less muscle tone, or any mare might experience pregnancy-associated edema (fluid swelling) that hinders circulation along the lower abdomen. In either case, the muscles can lose holding power, and a hernia (or rupture) ensues. Abdominal trauma can also cause this, as can pregnancy complications such as twins or hydroallantois (excessive fluid in a blind sac or allantois of an embryo).

**Umbilical Hernia**

Another hernia that occurs along the midline of the abdomen often occurs in foals. A defect in the linea around the umbilicus allows formation of an umbilical hernia. There is a concern that umbilical hernias might be heritable, but Baxter says, "Although these are known to be hereditary in cattle, to my knowledge these are not yet documented as heritable in horses."

Some veterinarians suspect there might be breed and gender risks related to heritability, as hernias are commonly noted in Quarter Horse and Thoroughbred fillies.

Trauma at birth and stretching of the umbilical cord before it ruptures might be causes of umbilical hernias. Baxter states that he knows of no specific way to prevent development of an umbilical hernia, but after foaling a mare should be allowed to lie quietly to minimize complications that could develop if she were to jump up and abruptly break the umbilical connection between her and the foal.

Many umbilical hernias are only one to two fingers wide, with the contents easily reduced (pushed back into the abdomen) with gentle finger pressure. Baxter notes, "An umbilical hernia directly communicates with the abdomen, so it is possible for bowel (small intestine, cecum, or colon) to become entrapped between the hernial rings. Interruption in circulation of strangulated loops of bowel can lead to a possibility of intestinal rupture into the abdomen, with life-threatening consequences. Or, a fistula may develop between the intestines and skin."

Baxter suggests waiting no more than six months to see if an umbilical hernia will repair on its own without surgical intervention. He comments, "If an umbilical hernia has not resolved by six months of age, even a small one, it should be repaired. Bowel entrapment is more common in the smaller hernias than the larger ones." Other veterinarians have said they don't believe correction is as urgent, so ask your veterinarian what his or her approach would be if your foal develops an umbilical hernia.

Usual repair techniques rely on general anesthetic and removal of the hernial sac and associated skin, followed by closure of the defect with sutures, a procedure called herniorrhaphy. A nonsurgical option is to place a hernia clamp to cut off blood supply to the hernial sac and overlying skin. These tissues then should die and fall away, with scar tissue filling in the midline defect. There are associated risks with this procedure, namely infection in the abdomen or skin, or evisceration (when intestines fall outside the body) if the clamp or large sections of skin fall away before full healing of the linea. The horse's tetanus immunization must be current.

Studies indicate that complications related to management of umbilical hernias, with surgery or using clamps, tend to be fairly uncommon.

**Scrotal/Inguinal Hernia**

Another location one might see a hernia develop is in the scrotal area of a colt or adult stallion. Initially, there might be some minor swelling that makes one testicle appear slightly larger than the other, unless the scrotal/inguinal hernia occurs on both sides. Baxter comments, "A heritable component has not been proven for inguinal (pertaining to the groin area) hernias, but these are definitely more common in certain breeds." These include Standardbreds, Saddlebreds, and Tennessee Walking Horses.

In general, Baxter recommends surgical attention if a scrotal hernia has not resolved by six months of age. He warns about danger signs that would indicate the need for immediate surgery. "As with an umbilical hernia, the biggest thing to watch for is a sudden change in the swelling, which usually (causes the testes to) increase in size either due to more intestinal contents entering the sac or because of associated edema," he says. "Also, if a hernia that was previously reducible with finger pressure can no longer be pushed back inside, then surgery is recommended. Colic signs may develop if a loop of bowel becomes entrapped in the hernia, necessitating emergency surgery."

A scrotal/inguinal hernia can also develop in a mature stallion. Baxter notes, "This often causes colic in a stallion soon after being used for breeding. Or, a scrotal/inguinal hernia can occur following strenuous exercise, such as racing. Baxter mentions that laparoscopic surgery holds promise as a technique to prevent inguinal/scrotal hernias by placing a piece of mesh over the internal inguinal ring. This prevents bowel from entering the scrotum and eliminates the need for castration."

**Castration Complications**

A lot of times castration complications involving protrusion of small intestine through an inguinal ring (an opening deep within the groin area for passage of the spermatic cord) are described. Strictly, these are not hernias, but eviscerations or eventrations. Younger horses are at greater risk than older horses for eviscerations and there is an anatomical basis for this--shorter inguinal canals and wider vaginal rings (the abdominal orifices of the inguinal canals).

**Diaphragmatic Hernia**

Another location where intestines can break through with disastrous consequences is the diaphragm, allowing abdominal structures to spill into the thoracic (chest) cavity. Baxter says there are two primary causes of diaphragmatic hernias: traumatic (most common) and congenital (existing before birth; these are generally retrosternal, or occurring behind the sternum). Most often, a horse will have a severe fall or run into something, and he will sustain blunt trauma to the chest area prior to developing a diaphragmatic hernia. The most apparent associated clinical sign is colic, although in a young horse there might be respiratory distress.

**Synovial Hernia**

Although this rare form of hernia occurs in the joint and not the body wall, it is worth mentioning, as it can occur. Baxter notes, "A synovial hernia occurs due to a hole in the fibrous joint capsule that allows the synovial lining to 'pooch out' through the hole. Often there is no associated lameness. Sometimes these resolve on their own, but if not, then surgical repair of the joint capsule defect will resolve the hernia."

Source: <http://www.thehorse.com/articles/20328/hernias-explained>