# What? You are going to ROLL my horse?

*Case Report from Thal Equine LLC January 2015*

Friday, an 11-year-old Thoroughbred gelding, arrived at Thal Equine showing signs of abdominal pain (colic). He had not responded to pain relievers and fluids by stomach tube given by the veterinarian at the farm. Upon arrival at our clinic, Friday still exhibited mild signs of abdominal pain; occasionally pawing, stretching and looking at his side. He looked visibly bloated, and he had poor intestinal motility, especially on the left side of his abdomen. While we continued to treat him for pain and dehydration, our most important task was to identify the Condition Causing Colic (CCC), i.e. the diagnosis.

COLIC DIAGNOSTICS

When a horse is experiencing abdominal pain (colic), it is the veterinarian's job to identify the underlying cause, the Condition Causing Colic (CCC). Only if we understand the nature of the CCC, can we best identify the treatment options.

Depending on the diagnosis, the appropriate treatment may be simple, such as pain-relief and fluids by nasogastric (stomach) tube. Cases that don't respond to these treatments might require more aggressive treatment such as hospitalization with IV fluids and ongoing pain relief and careful monitoring. About 5-10% of horses showing signs of colic require colic surgery.

The colic exam is a special physical exam veterinarian's do to look at certain aspects of the horse's health that reflect the intestinal and cardiovascular systems. It considers the complex anatomy and function of the 30-meter (100 feet) long equine gastrointestinal tract. The goal is to determine which

anatomic region(s) are affected, and how. We also also use a group of standard diagnostic procedures and tests to gather more information and reach a diagnosis (or at least have a better understanding of the problem) so that we can recommend the most appropriate course of treatment. The amount of and quality of information gathered during a colic exam depends on the veterinarian's knowledge and experience, and the diagnostics available. An important factor that we always consider is the severity and duration of the horse's pain.

The rectal exam is a very important diagnostic test for horses showing colic. The veterinarian inserts their gloved arm into the horse's rectum and feels the abdominal organs, including the regions of intestine, through the thin rectal wall.

In Friday's case, the results of the rectal exam were abnormal. We could feel the left colon caught in the space between the kidney and the spleen, hanging on the ligament that joins those two organs. Based on this finding, we believed that he was suffering from a condition called Left Dorsal Displacement of the Large Colon, with a Nephrosplenic Entrapment. Only a small percentage of horses suffering from colic have this condition.

WHAT IS A LEFT DORSAL DISPLACEMENT WITH NEPHROSPLENIC ENTRAPMENT?

In a normal healthy horse, the spleen rests against the left abdominal wall and is connected to the left kidney by a short, thick sheet of connective tissue, called the nephro-splenic ligament. Sometimes, however, the very mobile, left part of the large colon (a bulky double horse-shoe shaped organ that weighs about 100 lbs) slides between the spleen and the body wall (called a left dorsal displacement), and can further become entrapped on top of this ligament, within the nephro-splenic space. When the colon is trapped in this position, it is known as a "nephrosplenic entrapment.

No one really knows why this or many other intestinal displacements take place in horses. In this case, the prevailing wisdom is that abnormal movement (motility) of the colon causes dysfunction and gas accumulation within the colon, which then floats up or is pushed up into the abnormal position. Another hypothesis is that a feed impaction starts the abnormal movement of the colon.

Abdominal ultrasound is another very useful test for supporting this diagnosis. In this case, we used abdominal ultrasound to help us visualize the left upper region, and this confirmed our diagnosis. Friday's spleen could not be seen in its usual position against the body wall. In fact it was pushed well over to the right of his abdomen, and his left kidney was hidden behind a gas and feed-filled colon.

TREATMENT PLAN – JOG, ROLL OR SURGERY?

In many cases of intestinal displacement, surgical correction is required. In some "mild" displacements, medical therapy (IV and oral fluids and nursing care) may allow the colon to move back into position. But when we diagnose nephrosplenic entrapment, we usually try one of several special treatments to get the colon unhooked from the ligament.

One common approach to correcting a nephrosplenic entrapment is sometimes called the "drug and jog" approach. A veterinarian administers medication (phenylephrine) to shrink the spleen, and then the horse is jogged and exercised for about 10 minutes. The theory is that this movement helps to jostle the colon back into its proper position. Although some veterinarians favor this approach, and it has been reported to have a high success rate in the veterinary literature, I personally have had mixed results with it.

But I do often try this approach first because it is easy. If correction does not take place within a very short period of time though, I move on. In Friday's case, the "drug and jog" approach did not work, so I recommended the rolling procedure next. The "Rolling Procedure" is a non-surgical treatment

that, when performed correctly, is thought to return the colon to its proper position within the abdomen in about 70% of cases. In our practice, the rolling procedure has been a great tool for treating nephrosplenic entrapment.

Before we performed the rolling procedure on Friday, I was careful to explain to his owner the potential limitations and complications of the procedure:

- There is a very small risk associated with short-acting general anesthesia and recovery.
- In some cases, the rolling procedure simply does not work. The colon stays trapped and must be manually repositioned at surgery.
- In some cases, other intestinal problems are also present. These are not helped by the rolling procedure and so they persist.
- There is a small chance of rupture of the tight, distended colon as the abdomen is jostled around.
- In rare cases, this procedure may actually convert the simple entrapment of the colon to a twist. In these cases, the horse becomes more painful, and we immediately proceed to colic surgery if it is an option.

NON-SURGICAL CORRECTION – A/K/A THE "ROLLING" PROCEDURE

*Before I describe how veterinarians do this, understand that this procedure is only to be performed by a qualified veterinarian who is confident in their diagnosis of left dorsal displacement of the large colon. It is not a proper treatment for any other condition or diagnosis and could even be harmful.*

First, we medicated Friday with phenylephrine to shrink his spleen. Theoretically, this gives the large colon more space within the abdomen within which to move back to its proper position. Next, we anesthetized him using short-acting general anesthesia and gently lowered him to the floor of our padded stall. Starting with his right side down and using an

electric hoist to help us move him, we rolled his body through a certain sequence.

This sequence is intended to move the colon out of its trapped position and back to its proper position. Although the image above does not show it, we usually continue to roll a horse back over their chest and until they are left side up again, so we can examine the abdominal space on ultrasound while a horse is still lying down. We leave the horse in each position about 1-2 minutes, and we gently but firmly jostle their abdomen during each stage of the rolling.

After the sequence is done, we determine whether or not the problem is fixed using repeat ultrasounds and rectal exam performed while the horse is still down. In this case we rolled Friday three complete times! We almost gave up after two failed attempts, but decided to try it one more time. We were committed to trying to save Friday from colic surgery, if possible.  The third time was a charm!

In 15 minutes after the end of the rolling procedure, Friday was back on his feet. Once he became stable, we walked him to a hospital stall and gave him IV and nasogastric fluids. He rapidly improved. He started passing large quantities of gas, his abdomen quickly deflated, and his intestinal motility improved. He quickly began searching the stall floor for feed. He continued to do well and returned home two days later.  Had the rolling not been successful, the only alternative would have been colic surgery.

THE RISK OF RECURRENCE & PREVENTATIE ABLATION SURGERY

Although treatment was a short-term success, the problem is that this displacement/entrapment recurs in about 10% of horses. In this case, there were factors in Friday’s history and exam that we felt made it even more likely that it would happen again.

After discussing this risk of recurrence with the owner, I recommended a surgical procedure to prevent entrapment in the

future. A week later, Friday was transported to the Colorado State University Veterinary Teaching Hospital, where he had a special standing surgical operation performed to close (ablate) the nephrosplenic space. This surgery is performed through several small incisions in a horse’s left flank, using a laparoscope to visualize the repair.

The space is actually stitched closed, completely closing it, to prevent the colon from becoming entrapped there again. The word ablation means removal or destruction of something, the nephrosplenic space in this case. After the procedure, the left colon can, however, still freely move between the body wall and spleen

CONCLUSION

Friday is now happy and doing well at home. He will recuperate for about 6 weeks and should be able to return to full work soon.

In this case, with a rapid and correct diagnosis we were able to successfully perform a specific non-invasive treatment. It saved Friday from undergoing traditional colic (abdominal) surgery, a much more invasive and costly procedure that would have required a much longer lay-up period. Now, with the nephrosplenic space closed, there is very little worry of recurrence.

Friday and his owner, Erin

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