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Triaging is a process whereby medical decisions are made without a definitive diagnosis. Patients are ‘triaged’ based on physical examination findings into horses that require referral for potential surgery, or horses that can be treated in the field. This process should be performed within a short period of time, so that those horses with severe colic can receive immediate intensive medical treatment as soon as possible. When a horse is sent to a referral center, horses are triaged into those requiring medical treatment versus those that require surgery. The more efficiently horses can be triaged, the higher the survival rate, so this is the most critical component of colic management. Triage decisions can be completely made from findings on a history and physical examination.

**History and Physical Examination**

The only history that is initially required is the severity of colic, the duration of colic, and history of analgesics that have already been given. In terms of the severity of colic, it is simplest to group horses with colic into three broad categories: 1) mild (e.g. intermittent pawing and flank watching; 2) moderate (more vigorous signs, particularly including getting up and down and occasionally rolling); and 3) severe (violent attempts to go down and thrash).

On physical examination, make an educated guess as to whether the horse looks bloated. Owners can be asked to confirm if the horse is bloated, although they tend to be biased on this question when their horse has colic. The veterinarian can also make a more accurate determination of the level of colic (mild, moderate, or severe). This may require having the horse in its normal environment such as a stall or paddock so the behavior is not inhibited by being handled. The next step is to assess the cardiovascular status of the horse. This is done by assessing the color of the gums, obtaining a capillary refill time, and taking the heart rate. It is preferable to take the pulse from the facial artery so that an assessment of pulse quality (‘thready’ or strong) can be made. However, the horse sometimes makes this difficult because it is in pain; at which time auscultatation of the chest is appropriate. If the horse is severely painful, obtaining the heart rate in some way is essential because it has consistently been shown to be the best prognostic indicator. The level of dehydration can be determined
by tenting the skin on the neck, and looking at the position of the eye in the orbit. Horses are either not dehydrated (skin tent 2-3 seconds), 6% dehydrated (3-6 second skin tent, 8% dehydrated (6-8% skin tent, some evidence of the eye sinking back into the orbit) or 10% dehydrated (prolonged skin tent, obvious sinking of the eye).

The next component of the examination is auscultation of the chest to confirm heart rate (this may be affected by an α2 agonist such as xylazine). Auscultation of the abdomen at paralumbar fossa is completed for approximately 1 minute, and at a site on the lower flank for the same length of time. Listening to these upper and lower quadrants should be completed on both sides of the abdomen. Experience is needed to classify the intestinal sounds into one of 4 categories: normal, decreased, increased, or no sounds. Percussing the abdomen while listening with the stethoscope can also be used to check for excess of gas. This is most useful with the stethoscope placed over the base of the cecum in the right paralumbar fossa. The time required for this part of the examination provides a good opportunity to take the rectal temperature, and this should always be done. The temperature, which should be taken before the rectal examination, can provide evidence of an infectious disease such as the early phases of colitis.

Rectal palpation is the most useful diagnostic to determine the intestinal segment causing the cause of colic, but it is not mandatory to perform on every case of colic. It is critical to perform on horses that have repeat episodes of colic. Determining the position of the spleen is important. If it feels larger than normal, and pushed away from the body wall, the most frequent reason is that the colon is between the spleen and body wall. Phenylephrine (0.01 mg/kg maximum dose administered over 20-minutes in saline) and walking or jogging the horse can be very helpful to shrink the spleen to help resolve the problem. The final component of the colic examination is nasogastric intubation. Technically, anything greater than 2L is abnormal. Again, your opinion is very important. Findings of gas and pH of the fluid are of very little significance in the initial evaluation of colic. When horses have severe pain, the stomach tube should be passed early during the examination to make sure the pain is not from gastric distention which is close to rupture.

**Reasons to refer (Table 1)**

1. **Unrelenting pain.**
   There is sometimes confusion as to why a horse is so painful when all other examination findings appear normal. With a horse with unrelenting pain, which does not respond to analgesia, it most likely needs surgery and should be referred to a surgical facility. If analgesics such as flunixin meglumine or detomidine have little effect, there are no other alternatives to general anesthesia or euthanasia. At referral centers, frequently these horses are immediately taken straight into surgery with a minimal physical examination.

2. **Failure to respond to treatment.**
   If we consider that approximately 90% of horses with colic are simple colics requiring basic or minimal treatment, then 10% cases will require careful examination and decisions about the type of treatment; medical or surgical. This group of horses include
those horses that do not respond to your initial treatment as well as those the horses that appear to do well after initial treatment, but have recurrence of pain in several hours to a day later. This does not mean that all horses with return of pain need surgery, but this is the time to talk to the owner about their willingness for referral.

For the best outcome, veterinarians should be actively trying to refer horses before they become endotoxemic and have a high heart rate, or have other signs such as large amounts of gastric reflux, and multiple loops of intestine. These horses will need surgery, can be saved, but they need to be referred early in the disease process.

3. Signs of endotoxemia
All horses that have congested gums, delayed capillary refill time, and elevated heart rates need intensive care (particularly fluid administration). Horses improve after administration of flunixin meglumine (0.25-1.1mg/kg), but complete treatment for shock is needed. If an investment is made to have balanced electrolyte solutions available for intravenous administration at least 20-liters of fluid (approximately half the deficit of fluids in a moderately dehydrated horse) should be available to make fluid administration a valuable treatment.

4. Signs incompatible with a simple case of colic
Some horses that appear to respond well to analgesia, and have few signs causing concern, but have signs such as intestinal distension on rectal palpation, or large volumes of gastric reflux should be considered at high risk for surgical exploration and should be referred or placed on routine and frequent monitoring.

References


Blikslager AT, Roberts MC. Accuracy of clinicians in predicting site and type of lesion as well as outcome in horses with colic. *J Am Vet Med Assoc* 1995;207:1444-1447

## Table 1

<table>
<thead>
<tr>
<th>Examination Parameter</th>
<th>Normal</th>
<th>Refer</th>
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<tbody>
<tr>
<td>Colic</td>
<td>None</td>
<td>Recurrent, unresponsive</td>
</tr>
<tr>
<td>Pulse</td>
<td>≤48 bpm</td>
<td>60–80 bpm</td>
</tr>
<tr>
<td>Membrane color</td>
<td>Pink</td>
<td>Congested</td>
</tr>
<tr>
<td>CRT</td>
<td>&lt;2 s</td>
<td>3 s</td>
</tr>
<tr>
<td>Gut sounds</td>
<td>Gurgles q 4–5 s</td>
<td>No sounds</td>
</tr>
<tr>
<td>Rectal</td>
<td>Cecal band, pelvic flexure</td>
<td>Distended intestine</td>
</tr>
<tr>
<td>Nasogastric reflux</td>
<td>&lt;2 l</td>
<td>&gt;2 l</td>
</tr>
<tr>
<td>Abdominoocentesis</td>
<td>Light yellow</td>
<td>Serosanguinous</td>
</tr>
<tr>
<td></td>
<td>TP = 1–1.5 g/dl</td>
<td>TP &gt; 1.5 g/dl</td>
</tr>
<tr>
<td></td>
<td>TNCC = 3000–5000 cells/μL</td>
<td>TNCC &gt; 5000 cells/μL</td>
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Many of the abnormal parameters, as described in the text, should lead to a conversation with the owner or trainer about the possibility of referring the horse for potential surgery.