


Peritonitis in equines – Literature review

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ABSTRACT

Peritonitis is characterized as inflammation of the peritoneum and is considered one of the most serious complications in horses. When associated with colic, they are responsible for a high mortality rate. It can present in a primary or secondary form, but diagnosing the origin of this disease is almost always very difficult. Paracentesis turns out to be the most accurate diagnostic method, being analyzed together with all the means sought for an accurate diagnosis.

Keywords: Abdomen, Inflammation, Peritoneum.

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INTRODUCTION

Peritonitis is characterized as inflammation of the mesothelium of the peritoneal cavity. It can present both acutely and chronically, septic or aseptic, and secondary to infectious processes, trauma, chemicals, parasites, visceral disease, abdominal surgery or neoplasia. Animals that have peritonitis develop a picture of colic that is secondary to another intestinal disease, and is not characterized by a primary infection. Peritonitis has a high mortality rate when associated with colic (White, 1990).

The presentation of the symptoms will depend on the intensity and extent of the peritonitis. In horses, it usually has a secondary presentation to infectious, chemical or parasitic aggressions of the peritoneum, and even to an important complication after abdominal cavity surgery (RADOSTITS et al., 2009).

It presents with a difficult diagnosis, because the clinical findings have predominant manifestations that are common to other diseases (RADOSTITS et al., 2009).

In the analysis of the peritoneal fluid, which is one of the most specific tests to confirm peritonitis, the color of the fluid will be yellowish and cloudy. Turbidity will show an increase in the number of white blood cells that can be seen depositing at the base of the tube, and the high concentration of protein causes the liquid to foam if shaken vigorously (Hillyer & Wright, 1997).

In view of the above, this paper aims to discuss peritonitis in horses, its means of confirming the diagnosis and treatment suggested in the literature.

DEVELOPMENT

Peritonitis is both an inflammation of the visceral peritoneum and can also be an inflammation of the parietal peritoneum, and is characterized as a common finding in equine colic syndrome (LUNA, 1994).

The primary form of the disease usually occurs with an interrelationship between low host immunity (HANSON, 1999). The secondary form, on the other hand, occurs through bacterial contamination of the peritoneum resulting from a hematogenous dissemination of bacteria from a primary site of infection by *Streptococcus equi* and *Rhodococcus equi*, perforation of viscera, intestinal devitalization secondary to strangulation or infarction, iatrogenic intervention, such as the application of trocars and enterocentesis (MURRAY, 2000).

The peritoneum has very important functions for the digestive tract, such as promoting a selectively permeable barrier between the contents of the lumen and the body's tissues, facilitating the transport and digestion of food, being responsible for the absorption of the products of this digestion, and also producing hormones that regulate the activity of the digestive system. There are also cells present in this mucus-producing layer responsible for lubricating and protecting the wall of the digestive tract (JUNQUEIRA, 2004).



This differentiation between the acute or chronic form within a peritonitis setting is arbitrary. But, the authors believe it to be a useful classification, as they differ in terms of two syndromes. However, it is recognized as a difficult and complicated practice, where over the course of the disease, it can undergo changes such as going from acute to chronic or even from chronic to acute (HILLYER & WRIGHT, 1997).

The most evident clinical signs observed include moderate abdominal pain, depression, anorexia, weight loss, decreased borborygmus, diarrhea, hyperthermia, tachycardia, tachypnea, and clinical manifestation of dehydration (AUER, 2006; DABARAINER, 2006).

The diagnosis is made through the set of information obtained, based on the history and clinical symptoms, findings in the clinical examination, in addition to hematology and blood biochemistry (SEMRAD, 1992).

Among the numerous complementary diagnostic tests available, the most reliable for peritonitis is abdominal paracentesis followed by macroscopic, cytological and biochemical evaluation of the peritoneal fluid. Like any laboratory test, the aspects of the fluid cannot be interpreted in isolation, several abdominocenteses must be performed, because the initial results may be inconclusive or the clinical condition of the animal may change, especially in cases of associated colic (PARRY & BROWNLOW, 2005).

Normal peritoneal fluid is essentially plasma dialysis which, when normal, has a low volume, low cellularity, and low concentration of total proteins. Urea and glucose are substances that have a low molecular weight, diffusing easily over the mesothelium and rapidly balancing between the plasma/interstitial fluid and the peritoneal fluid. On the other hand, molecules with a higher molecular weight, such as creatinine and most enzymes, are less likely to diffuse, taking longer to balance when there is a change in their concentration or in the blood or peritoneal fluid (Parry & Brownlow, 2005).

The fluid indicative of peritonitis presents with high nucleated cell counts, high amounts of proteins, fibrins and bacteria from both intracellular and extracellular environments (MARKEL, 1988).

A treatment must be constituted for each specific cause that may be developed, a therapeutic procedure within the supposed needs presented by the animal and, if necessary, exploratory laparotomy may be indicated (RADOSTITS et al., 2009).

Because it is accompanied by a vast bacterial flora, broad-spectrum antimicrobials are needed to treat this disease. The recommended doses are higher doses to repair at high blood and tissue levels and should be maintained daily until the animal has fully recovered (RADOSTITS et al. 2009).

The most commonly used antimicrobials are Gentamicin at a dose of 2.2 to 3.3 mg/kg of body weight (BW) intravenously (IV) every eight to twelve hours; 22,000 International Units



(IU)/Kg of BW of penicillin intramuscularly (IM) every six to twelve hours. Oral administration of 15 to 25 mg metronidazole/kg BW is also recommended. Acute peritonitis, when caused by *Actinobacillus equuli*, responds rapidly to treatment with penicillin-streptomycin or ampicillin alone administered systemically. IV hydroelectrolyte therapy should be intense as it is a vital part of treatment. The use of non-steroidal anti-inflammatory drugs at a dose of 0.25 to 1.1 mg of flunixin meglumine/Kg BW IV every eight to twelve hours is indicated when peritonitis is accompanied by shock, but no information is available on the efficacy of this administration (RADOSTITS et al. 2009).

The recovery rate is considered relatively good, usually around 70% in therapy. The mortality of animals taken for surgery is about 56%, and chronic conditions do not respond well to treatment due to the time of involvement of the intestine with fibrous adhesions (RADOSTITS et al. 2009).

FINAL THOUGHTS

It is concluded from this study that secondary causes have a higher rate of causes in equine peritonitis, and that the diagnosis of the cause will most often not be detected. The safest method for confirmation is paracentesis, but it must be analyzed together with all procedures and exams done as a whole and that the treatment, when therapeutic, has a more favorable prognosis than the surgical one.



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