

Intestinal motility was normal, and the horse never developed a gastric reflux. Twelve hours after surgery, the yearling began to drink, and 12 hours later, he started to eat mixed hay and grass.

The resected cecum contained a large number of tapeworms, identified as *A. perfoliata*. The horse recovered through the postoperative period without complications and was discharged on the seventh day after surgery. The wound healed quickly, and, in the following months, the horse has never experienced colic or an anomalous and excessive reduction of body weight or a particular lack of absorption.

# Discussion

Cecocolic intussusception strikes mostly young subjects.<sup>2</sup> As a result, the veterinarian must always bear in mind the occurrence of such a pathology when he examines a horse during its first two years of life, however difficult it may be to reach a sure diagnosis, before submitting the horse to an explorative laparotomy.

In fact, because this pathology concerns chiefly foals or yearlings, it is not always possible to perform a satisfactory rectal examination and the serious symptomatology does not always allow the application of further diagnostic techniques, such as the radiographic and ultrasound examination of the abdomen.

On the other hand, the peritoneal fluid characteristics do not help the clinician who can find a nearly normal peritoneal fluid even if the intestinal wall is already necrotic as in our case. The peritoneal fluid characteristics undergo a serious deterioration only at advanced stages of this pathology most likely when the right ventral colon wall is already deteriorated.

Cecal intussusceptions can cause two different symptomatology: a subacute one, with chronic and recurring abdominal pains that can persist for days, and a sudden acute one that causes rapid worsening of physical conditions with serious pain.

The success of surgery indicates that, when reduction of the intussusception is possible, resection of the affected cecum can give good results without apparently influencing the horse's digestive capacities; however, with regard to this, more comprehensive studies would be necessary. Moreover, we believe that, when it is not possible to resolve the intussusception manually; one technique<sup>1,7</sup> can be very helpful. This technique avoids large colon enterotomy. The author isolates the invaginated portion of the cecum using a double row of Cushing's sutures and he leaves it in the intestinal cavity of the large ventral

colon. This procedure minimizes peritoneal contamination risks and avoids the large colon wall suture, which may be difficult since the wall is already edematous and suffering.<sup>4,8</sup>

Although it was not possible to verify the real responsibility of tapeworm infection for cecal intussusception, we think that the presence of these parasites must be considered a predisposing factor. Also in our case, as in most cases reported by other authors, the presence of a massive infection by *A. perfoliata* had been noticed.

Several drugs are effective for the treatment of *A. perfoliata* infections. These drugs are pyrantel pamoate (13.2 mg/kg PO),<sup>9</sup> pyrantel tartrate (2.64 mg/kg daily PO),<sup>10,11</sup> bithionol (7 mg/kg PO), nicosamide (8.8 mg/kg PO),<sup>12</sup> and praziquantel (1 mg/kg PO).<sup>13</sup> None of these drugs are currently approved in North America specifically for use against *A. perfoliata* infections, and only pyrantel pamoate is approved in Italy for this use.

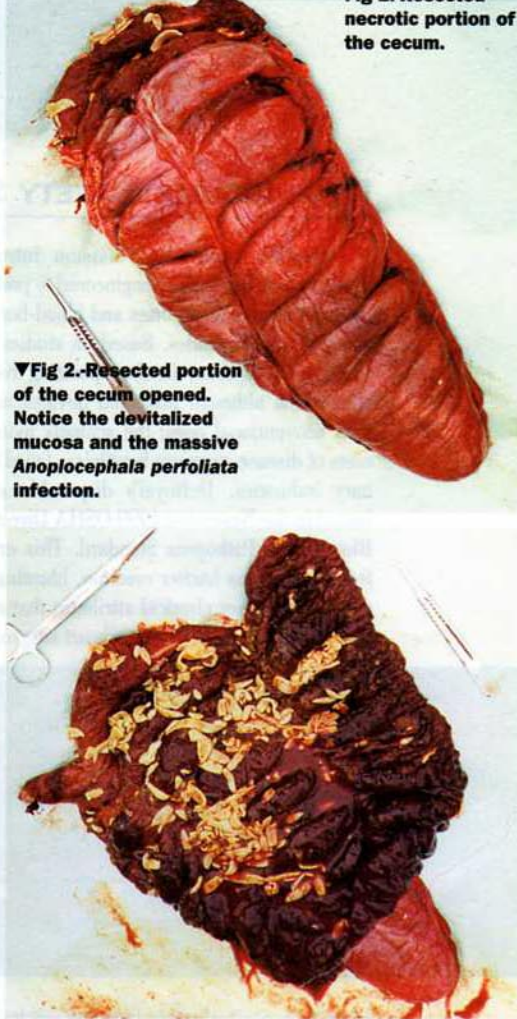
Albendazole, tested in the horse against *Echinococcus* infections, is of questionable efficacy against *A. perfoliata*, and fenbendazole at various dosages failed to eliminate tapeworms infections in one half of horses tested.<sup>14</sup>

The *A. perfoliata* pathological action is not completely clear. In fact, a massive presence of these tapeworms can be totally asymptomatic even in performance and race horses that are being trained, and their presence may be traced only after they have caused very serious intestinal damage. We personally verified a case of spontaneous cecal perforation caused by a massive infection of *A. perfoliata* in a 4-year-old Thoroughbred female engaged in races.

Two cases of intussusception<sup>4,5</sup> were reported after an organophosphate therapy, and two ileal intussusceptions were reported in horses which had received ivermectin.<sup>4</sup> Our yearling was treated with ivermectin two months before the colic, so we believe there is no correlation between the administration of the drug and the intussusception in this case.

On the other hand, an increase in the number of horses with colic and a heavy tapeworm infection have been reported,<sup>6</sup> agreeing with a previous case<sup>4</sup>, which suggests that there has been an increase in intestinal incidents associated with tapeworms since ivermectin was marketed.

Therefore, thorough research is still needed for proving that *A. perfoliata* is responsible for cecocolic intussusception and for developing a suitable, more specific prophylaxis against these parasites, based on strategically timed treatments.



▼Fig 2.—Resected portion of the cecum opened. Notice the devitalized mucosa and the massive *Anoplocephala perfoliata* infection.

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