

## CASE REPORT

### MESENTERIC ANEURISM IN A HORSE

R. A. CURTIS\*

THE CLINICAL FINDINGS associated with mesenteric aneurism in the horse have not been extensively described. This case report is intended to add to the available information on the subject.

#### *History*

The patient was a two-year-old pony gelding which grazed with his dam on a good grass pasture. On the day previous to our visit, the horses had broken a door into a swine barn and had consumed an unknown quantity of a commercial hog ration. This was not discovered for eight hours, and the horses had access to water in this interval.

#### *Clinical Findings*

We were called to the farm when the pony appeared anorexic and showed "signs of pain". This was about 12 hours after the ingestion of the hog ration. When first observed, the pony appeared dull and depressed, and he frequently strained to defecate. These frequent attempts resulted in the passage of soft, mucous-covered, fully formed fecal balls of normal colour and odour. While straining, he frequently passed small amounts of urine. The pony crouched intermittently, as if in pain, pawed the ground with his front feet and then laid down. He rolled onto his back several times and large amounts of flatus were passed with each roll. The pony then got up and there was no evidence of either a generalized or a patchy sweating following these painful attacks. Clinical examination revealed the following: temperature 98.8° F., heart rate 80 per minute, respiratory rate 54 per minute. On auscultation of the thorax, heart and lung sounds were normal. Auscultation of the abdomen revealed a lack of sounds in both the colon and the cecum, indicating a decreased motility in these organs. No evidence of increased warmth or pain associated with laminitis was detectable on palpation of all four feet. A rectal examination was attempted but could not be performed adequately because of the small diameter of the anal sphincter.

#### *Treatment and Subsequent History*

The pony was given 2,000 ml. of a balanced electrolyte solution<sup>1</sup> containing 120 mg. of acepromazine maleate<sup>2</sup> intravenously. In addition, 50 mg. of thenylpyramine hydrochloride<sup>3</sup> of an antihistamine were given intramuscularly and the pony was drenched with one-half pound of an antacid preparation<sup>4</sup> in one gallon

\*Department of Medicine and Surgery, Ontario Veterinary College, Guelph, Ontario.

<sup>1</sup>Pro-ionate, W. E. Saunders Limited, London, Ontario.

<sup>2</sup>Atravet, Ayerst, McKenna and Harrison Limited, Montreal, Quebec.

<sup>3</sup>Pyrahistine, Pitman-Moore Company, Allied Laboratories, Division of Dow Chemical of Canada Limited, Don Mills, Ontario.

<sup>4</sup>Rumide, Pitman-Moore Company, Allied Laboratories, Division of Dow Chemical of Canada Limited, Don Mills, Ontario.

of warm water. Six hours after our initial visit, the pony was revisited and re-examined. The temperature was 103.2° F., heart rate 84 per minute and the respiratory rate 48 per minute. On auscultation of the abdomen, the sounds over the colon and cecum were more frequent but weak in intensity. The pony appeared duller and more depressed than on the initial visit. He had stopped rolling, was reluctant to move and assumed a "saw horse stance", but there was no evidence of laminitis on palpation. A stomach tube was passed intranasally and a solution was given which contained one-half gallon of mineral oil, eight ounces of dioctyl sodium sulfosuccinate (60 mg. per ounce) in emulsified soybean oil<sup>5</sup> and three anti-histamine tablets.<sup>6</sup> The owner was instructed to give the pony forced exercise, and a revisit was scheduled for the following day. On day two, the pony showed marked clinical improvement and there was no evidence of the intermittent attacks of pain seen on day one. He appeared more alert and his eyes were brighter. Furthermore, he ate the oats and hay offered him and drank two gallons of water. In contrast to our initial visit, no feces had been passed on day two. The pony was no longer reluctant to move but still held a "saw horse stance" when he was left alone in the stall. There was still no evidence of laminitis on palpation. The temperature was 103.6° F., the heart rate 108 per minute and the respiratory rate 52 per minute. At this time, the pony was given 125 mg. of the anti-histamine intravenously, 6 mg. of neostigmine methylsulfate<sup>7</sup> intramuscularly and five grams of dihydrostreptomycin plus four million I.U. of penicillin<sup>8</sup> intramuscularly. Approximately one minute after the administration of the neostigmine, the pony passed a large amount of feces which was normal in odour and consistency. On day three, the owner phoned us to say that the pony's appetite was still improving and that the general condition was so improved he did not wish us to make another visit. On the morning of day four, the owner found the pony dead in its stall.

#### *Post Mortem Findings*

On gross post-mortem examination, several regions of the intestinal tract, notably the ventral sac of the cecum and pelvic flexure of the large colon, were white and necrotic, while adjacent areas were hyperemic. There were at least two perforations present in the necrotic areas and this had led to a fatal peritonitis. In addition, there were large, recently formed thrombi present in the coeliac and anterior mesenteric arteries. The arteries in the mesentery and gut wall were also thrombosed.

#### *Discussion*

A reassessment of the clinical picture was made necessary by the autopsy findings. The history suggested grain engorgement, but there was no evidence of this at necropsy. Therefore, it must be assumed that the entire clinical picture was related to parasitic aneurisms followed by visceral thrombosis and subsequent fatal peritonitis. According to Ottaway and Bingham (4) rectal palpation is a

<sup>5</sup>Dioctol, Stevenson, Turner and Boyce Limited, Guelph, Ontario.

<sup>6</sup>Histaplex, Pitman-Moore Company, Allied Laboratories, Division of Dow Chemical of Canada Limited, Don Mills, Ontario.

<sup>7</sup>Stiglyn, Pitman-Moore Company, Allied Laboratories, Division of Dow Chemical of Canada Limited, Don Mills, Ontario.

<sup>8</sup>Distrycillin, E. R. Squibb and Sons Limited, Montreal, Quebec.

valuable clinical aid to the diagnosis of mesenteric aneurisms, but unfortunately this was not possible in this case and the history was such that a diagnosis was made without employing other diagnostic aids. A blood smear may have shown an eosinophilia, which could have been useful, in view of the fact that there are enormous numbers of eosinophils in histological section of some aneurisms (3). The rise in temperature and the increased heart rate were not adequately explained in our clinical interpretation of this case and they were overlooked when the pony started to make a satisfactory recovery.

In the horse, the presence of parasitic aneurisms of the cranial mesenteric artery is so common that they can almost be considered normal for that vessel (4). Fortunately, clinical manifestations of an aneurism are not nearly as common, but can be recognized in three syndromes. Recurrent attacks of spasmodic colic may occur, the pathogenesis of which is still being debated. Spasmodic or verminous colic may be related to a mechanical interference with blood flow to a part of the intestine by thrombus formation. However, Ottaway and Bingham (4) state that this does not commonly occur and they believe that the interference with blood flow is related to a nerve lesion caused by pressure from an adjacent aneurism. Regardless of the pathogenesis, the interference with blood flow may result in infarction of the intestine, damage to the peritoneum and subsequent pain. An acute attack is ended by the establishment of collateral circulation to the affected part. In some cases, before collateral circulation takes place, more permanent damage may result with the development of a localized peritonitis. This allows the second clinical syndrome to take place. Adhesions form to wall off the peritonitis and this results in a narrowing of the intestinal lumen in a portion of gut (1). A horse affected in this way continues to eat but intestinal hypermotility produces a persistent mild colic; the animal is unthrifty and eventually dies after an illness of one to two months. The third clinical picture as recorded in this case report occurs when thrombus formation completely occludes an end artery or several visceral arteries. Infarction occurs and necrosis of a large section of bowel results in eventual rupture and fatal peritonitis.

As stressed in this case report, the clinical diagnosis of parasitic aneurism is especially difficult when a rectal examination is not possible. As an additional example, a four-month-old colt, in our practice, recently died from a parasitic aneurism. The clinical and necropsy findings (2) were similar to those reported here. In view of the impossibility of treatment, even if diagnosis is possible, it is to be hoped that the newer anthelmintics will prove successful in controlling the parasite, *Strongylus vulgaris*, which is responsible for this condition.

#### Acknowledgement

Grateful thanks are due to Dr. T. J. Hulland, Pathology Department, Ontario Veterinary College, who performed the necropsy on the pony.

#### References

1. BLOOD, D. C. Personal communication. Ontario Veterinary College, 1962.
2. COTE, J. F. Personal communication. Ontario Veterinary College, 1962.
3. OTTAWAY, C. W., and BINGHAM, M. L. Some records of parasitic aneurysm in clinically affected horses. *Vet. Rec.* 53: 275. 1941.
4. OTTAWAY, C. W., and BINGHAM, M. L. Further observations on the incidence of parasitic aneurysm in the horse. *Vet. Rec.* 58: 155. 1946.