



### Case Report

## CASE OF LARGE COLON IMPACTION IN A HORSE

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### ABSTRACT

A case of spontaneously developed large colon impaction (nylon mass) in a horse is described. The clinical, hematological, biochemical and ECG examinations have been done. Alterations in leucogram, total bilirubin, AST, ALP, AST, LDH, urea and creatinine were found out. The extraordinary change in ECG was observed.

**Key words:** equine; colic; haematology; biochemistry; ECG.

### INTRODUCTION

Impaction of the intestinal tract is common in horses, causing nearly 30% of all colics [1, 2, and 3]. Feed impactions result in partial or complete intestinal obstructions and can develop throughout the gastrointestinal tract. Clinical signs, diagnosis, and medical or surgical management of impaction of the cecum, ileum, duodenum, and stomach in horses have been reported elsewhere [4-8]. Large colon impaction often develops at sites of narrowed luminal diameter such as the pelvic flexure or just proximal to the transverse colon in the right dorsal colon [9]. There are many causes of impaction of the large colon: rough feed, old age, poor dentition, parasites, overeating, inadequate water intake, motility disorders and limited exercise have been implicated [9].

Horses with large colon impactions usually have a history of signs of mild, intermittent abdominal pain with a decrease in borborygmi [1]. Diagnosis is made on the basis of transrectal palpation of an indentable mass in the pelvic flexure or left ventral colon [9, 10]. Most common used medications in horses with large colon impaction included: laxatives, oral administration of fluids and

parenteral administration of analgesics. In some cases the surgical intervention is required.

### CASE DETAILS

#### CASE HISTORY

Two years and six months old Eastern-Bulgarian stallion (350 kg bwt) pictured below was presented with 48 hours history of intermittent abdominal pain, absence of appetite and thirst. The owner reported that the horse did not urinate and defecate since 24 hours. Markedly abdominal enlargement and progressive respiratory distress was observed too (**Figure 1**). Prior to referral to the hospital no drugs have been administrated.



*Figure 1. General view of the patient*

### CLINICAL EXAMINATION

On arrival at the Clinic of the Veterinary Faculty of the Trakia University, the stallion

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was depressed without signs of abdominal pain. Rectal temperature (39.0°C) and respiratory rate (35 breaths/min) were elevated; heart rate was 78 beats/min and pulse was strong and irregular. Mucous membranes were flushed with hemorrhages. Respiratory distress and noisy breathing were presented. The abdomen was extremely distended and tympanic. Abdominal sounds were not detectable. Transrectal examination identified the impaction located in the pelvic

flexure; gas accumulation in the large colon; emptiness of the rectal ampoule with mucous membranes into it. Nasogastric reflux was not obtained.

The haematological analyses, differential white blood cells counts (Auto Haematology Analyzer BC-2800 Vet, Mindray) and blood biochemistry (Biochemistry analyzer BA-88, Mindray) are presented in **Table 1**.

**Table 1.** Haematological and serum chemistry data in a horse, referred to the clinics of the Faculty of Veterinary Medicine – Stara Zagora

| Determination      | Units       | I Values | II Values | III Values |
|--------------------|-------------|----------|-----------|------------|
| Haemoglobin        | g/L         | 149      | 107       | 125        |
| Haematocrit        | L/L         | 0.33     | 0.23      | 0.26       |
| Erythrocytes       | T/L         | 9.21     | 6.8       | 7.9        |
| Leucocytes         | G/L         | 8.3      | 9.3       | 24.2       |
| MCV                | fl          | 36.2     | 34.8      | 33.4       |
| MCH                | pg          | 16.17    | 15.73     | 15.82      |
| MCHC               | g/L         | 451.5    | 465.2     | 480.7      |
| Differential white | blood cells | count    |           |            |
| Ba                 | %           | 0        | 0         | 0          |
| Eosinophils        | %           | 0        | 0         | 0          |
| M                  | %           | 0        | 0         | 0          |
| Mm                 | %           | 1        | 1         | 1          |
| St                 | %           | 18       | 18        | 7          |
| Seg. Neutrophils   | %           | 50       | 40        | 77         |
| Lymphocytes        | %           | 29       | 36        | 12         |
| Monocytes          | %           | 2        | 3         | 3          |
| Glucose            | mmol/L      | 8.15     | 3.62      | 2.28       |
| Total bilirubin    | µmol/L      | 92       | 48.2      | 35.3       |
| Total protein      | g/L         | 74       | 55        | 55         |
| AST                | IU/L        | 708      | 617       | 658        |
| ALT                | IU/L        | 67       | 46        | 42         |
| Urea               | mmol/L      | 18.76    | 36.61     | 36.68      |
| Creatinine         | µmol/L      | 213      | 598.3     | 286.2      |
| GGT                | IU/L        | 31.4     | 13.2      | 10         |
| LDH                | IU/L        | 2475     | 893       | 1259       |
| ALP                | IU/L        | 355      | 446       | 410        |
| Ca                 | mmol/L      | 2.51     | 2.52      | 2.85       |
| P                  | mmol/L      | 2.38     | 1.56      | 0.96       |
| Mg                 | mmol/L      | 1.15     | 0.9       | 0.87       |
| K                  | mmol/L      | 3.31     | 2.14      | 2.0        |
| Chloride           | mmol/L      | 54       | 56        | 53         |
| Cholesterol        | mmol/L      | 2.58     | 2.94      | 4.13       |

*I – at arrival; II – four days later; III – fortnight after.*

#### LABORATORY ANALYSIS

**Haematology:** The results showed a decrease of haematocrit and progressive increase of MCHC. There was marked leucocytosis (24.2 G/L) on the third examination, left blood shift with neutrophilia, lymphopenia and aneosinophilia.

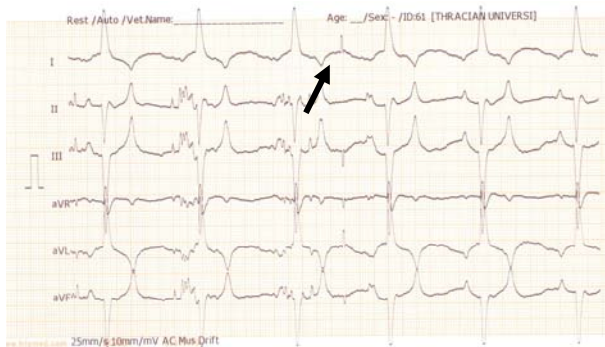
**Biochemistry:** On arrival the blood sugar was mild elevated but afterwards there was markedly decrease of this parameter. The total

bilirubin was elevated at the beginning of the treatment. The ALT, ALP, AST and especially LDH activity were extremely raised. The blood levels of the urea and creatinine were very high all the time of hospitalization. The hypocalcaemia, hiperphosphataemia and decrease of potassium were developed during the ailment.

The late reception of the horse in the hospital and developed intestinal

inflammation are the reasons for the leucocytosis. Acquired autointoxication leads to hepar and kidney malfunction and circulatory disorders (as laboratory results show).

*Electrocardiography (Cardipia 406 NV):* Premature atrial contraction. Note the spontaneous change in P wave conformation in premature cycle. The signal arrives sufficiently early that there is no disturbance of sinus rhythm (**Figure 2**).



**Figure 2.** Electrocardiography

#### THERAPEUTIC PLAN AND OUTCOME

Because the horse had signs of only mild abdominal pain it was managed by use of balanced electrolyte solution, I.V., at the rate of 2L/h with the intent being to over hydrate. Flunixin meglumine-0.5mg/kg bwt, I.V, q 12h (Banamine sol.-Schering-Plough Animal Health Corp.NJ), Benzylpenicillin procain-10000 IU/kg bwt, I.M., Dehydrostreptomycin sulfate-10mg/kg bwt, I.M. q 24h (Intramycin CEVA Sante Animale) were administered. Magnesium sulfate 1g/kg P.O. was administered via nasogastric tube. To avoid threatening asphyxia large colon transrectal puncture was done and large volume of gas was evacuated. The resolution of the impaction occurred after 48h (**Figure 3**).

In the next two days the signs of enteritis with heavy diarrhea were presented. To prevent further complications astringents were prescribed (tannin 2.5g/100 kg bwt and bismutum subnitricum 5g). Next two weeks health state significant improvement was observed. After a month a full recovery was occurred.



**Figure3.** Nylon mass

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