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Introduction

Due to its minimal attachment to the abdomen, the colon ascendance has the capacity to move freely within the abdominal cavity. It can return to its normal position or become entrapped in an abnormal position, resulting in a group of conditions known as **large colon displacement (LCD)**¹. Common forms of LCD include left dorsal displacement and entrapment of the correct oriented left colon in the nephrosplenic space which is known as **nephrosplenic entrapment (NSE)**, displacement of the pelvic flexure to cranial and to the right quadrant of the abdominal cavity which is known as **right dorsal displacements (RDD)**, long axis rotation of the large colon to less than 270° also known as **non-strangulating large colon volvulus (LCV)**, and **retroflexions of the pelvic flexure (PFR)**^{2,3,4,5,6}. LCD is the most common diagnosed non-inflammatory intestinal disease in our referral clinic in a 20 year retrospective study with 45%⁷. Clinical information regarding identification of their specific forms remain scarce. The **aim** of this study is to present clinical data regarding this groups of patients in more details.

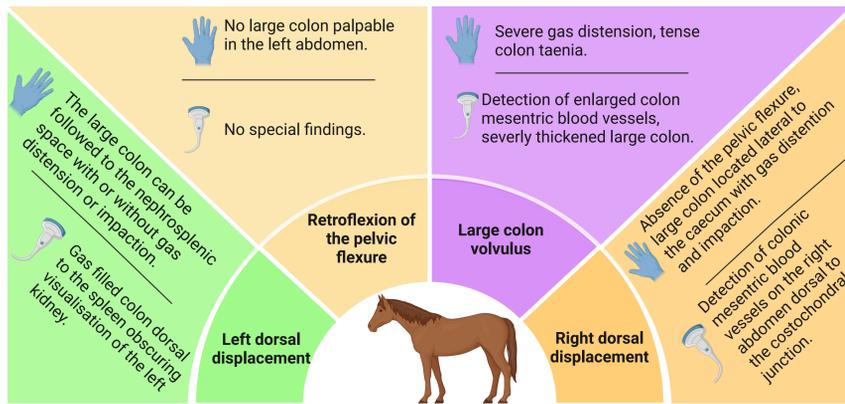


Figure 1: Forms of LCD in the horse according to ^{2,3,4,5,6}.

Methods

Study design: A five-year retrospective study in a period between 1 January 2019 and 31 December 2023.

Animals: Horses and ponies admitted to the equine clinic, internal medicine, Justus-Liebig University of Giessen with the main diagnosis of large colon displacement.

Patient data: Data were extracted from the electronic patient documentation database (EasyVet). Demographical data included age, breed and sex of the patients. Forms of LCD diagnosed in the internal medicine were recorded following the diagnosis key developed by Klinkel⁷. Outcome from the internal medicine was differentiated between patient discharge, referral to surgery and euthanasia. Descriptive statistics were used to describe the population.

Results

Out of **1.651** patients admitted with non-inflammatory intestinal diseases during the five years, **510** horses and ponies (**31%**) were diagnosed with LCD. A total of **284 (55.7%)** males and **226 (44.3%)** females diagnosed with different forms of LC. (Chart 1). Patients age ranged between 11 month and 36 years (**14.1 ± 6.7 years**)(Chart 2).

The **non-differentiated** form of LCD was the most commonly diagnosed, other forms included (Chart 3): nephrosplenic entrapment (**NSE**), right dorsal displacement (**RDD**), large colon volvulus (**LCV**), left displacement between the spleen and the body wall (**DSBW**), and retroflexion of the pelvic flexure (**PFR**). **Eighty seven** patients with non differentiated LCD were referred to surgery, 60.9% (n=53) were further diagnosed with one form of LCD (Chart 4).

The rate of non-differentiated LCD in warmbloods (n= 168) was 53.3%. the rates were considerably higher for ponies (n= 34) and Icelandic horses (n=37), at 79.4% and 70.2% respectively.

Overall, **82% (n=418)** patients were discharged: **83% (n=277)** following medical treatment, and **79.2% (n=141)** following surgery (Chart 5).

Results

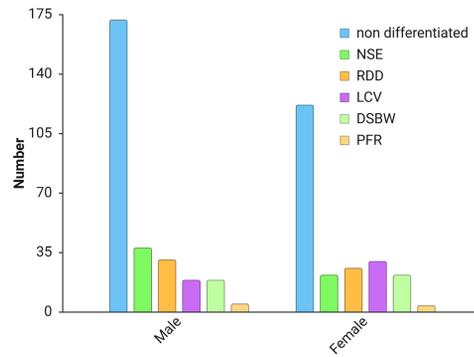


Chart 1: Forms of LCD according to sex (n=510).

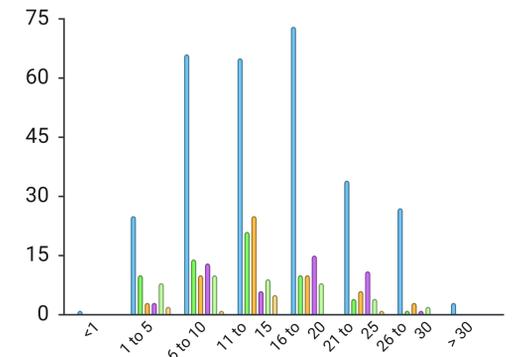


Chart 2: Forms of LCD according to age (n=510).

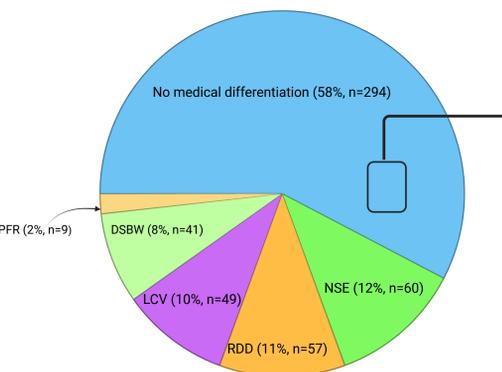


Chart 3: Forms of LCD diagnosed (n=510).

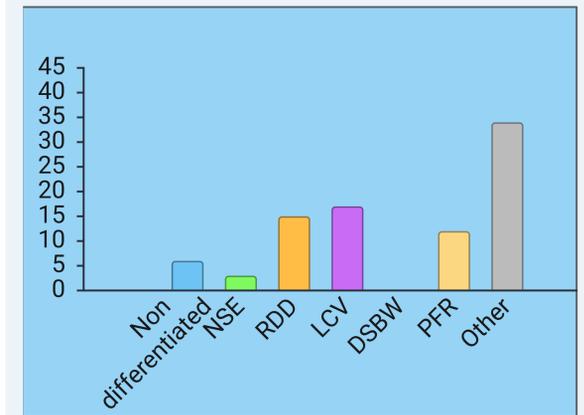


Chart 4: Surgical findings in non-diff. LCD, (n=87).

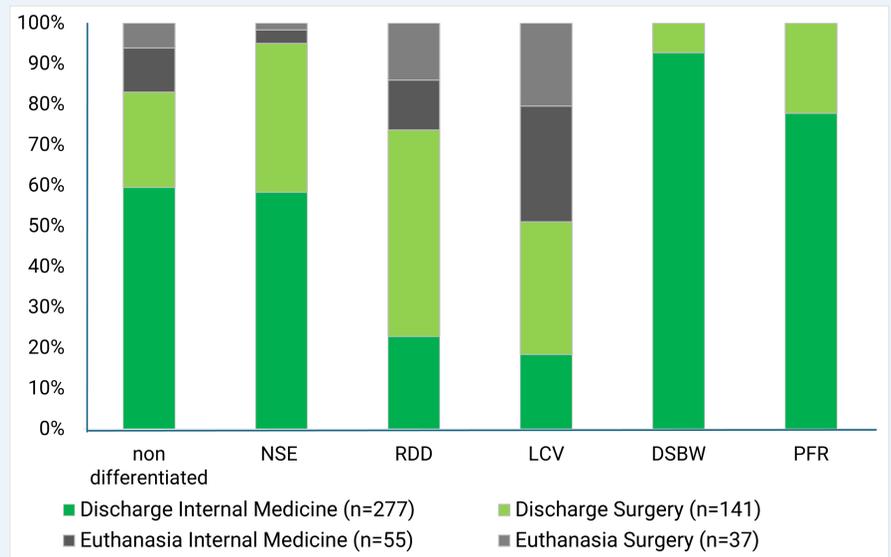


Chart 5: The outcome of the different forms of LCD patient groups, (n=510).

Summary

LCDs account for about one third of colic patients referred to the equine clinic internal medicine. Only in 42% of cases could the form of displacement be determined precisely. As we were unable to find any comparable data, the high rate of non-differentiated displacements should be discussed - are there similar experiences in other clinics?

Of the 294 of colic patients with non differentiated LCD, 29.5% required surgery. Even though the survival rate of medically non-differentiable LCDs is high at 83%, the goal should be to achieve a more accurate diagnosis of the displacement.

