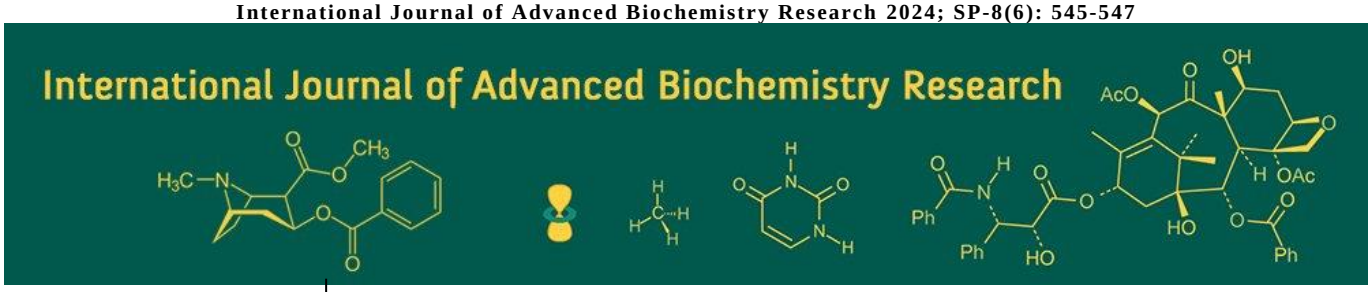

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Regurgitation secondary to segmental torsion of intestine in a *Bubalus bubalis*: A case report

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Abstract
A four-year-old and 8month pregnant Murrah buffalo was presented at university hospital in medicine section with history of anorexia, colic signs, continuous regurgitation of ruminal contents along with coughing and white mucoid discharge from the rectum. During clinical examination, animal was diffusely congested mucous membrane, respiratory distress with open mouth breathing. Animal collapsed during clinical examination. Intestinal torsion with necro-hemorrhagic enteritis and toxemia were verified by postmortem investigation of the patient. Histopathological examination of intestinal mucosa revealed severe hemorrhage and necrotic changes in intestinal mucosa and submucosa with leucocytic infiltration. Despite the low occurrence of digestive system disorders in cattle, intestinal torsion represents serious intestinal clinical conditions. These reports take attention to the importance of a multidisciplinary approach to provide a correct diagnosis of intestinal diseases.

Keywords: Buffalo, regurgitation, intestinal torsion

Introduction
Although they occur less commonly than forestomach and abomasum diseases in bovines, dilatation, torsion, and intussusception of the intestine are highlighted as causes of digestive dysfunctions, representing a diagnostic challenge, and economic losses to dairy production. Intestinal obstruction (IO) is a potentially life-threatening disorder in all large animals. Extraluminal obstructions of the gastrointestinal tract (e.g., strangulation, intussusceptions, torsion and volvulus) and intestinal compression with an expanding abdominal mass such as fat necrosis or lymphosarcoma are reported. It is most commonly implicated in conditions that alter intestinal motility, resulting in hyperperistalsis in the oral segment, associated with the relaxation of the distal segment, like, parasitism; sudden alterations in diet; enteritis (bacterial or viral) and intestinal injury associated with distal segment relaxation. Although the diagnosis can be made through the association of anamnesis, clinical signs, and complementary exams, it is usually performed during an exploratory laparotomy, or anatomopathological findings. Abnormal regurgitation in ruminants defined as the discharge of food from the mouth and occasionally from the nose (Radostits *et al.*, 2007) [9]. Causes include esophageal dilatation and narrowing, various types of trauma, chemical irritation, infection and parasites ((Dirksen 2002) [6]. Moreover bovine are less likely to show overt colic symptoms in functional intestinal obstruction and can have no signs of cardiovascular compromise and shock (Ridgway *et al.*, 2021) [10]. This manuscript reports the etiology underlying the regurgitation of ruminal contents in dairy buffalo based on postmortem analysis.

Case Report
A four-year-old dairy Murrah buffalo weighing 450 kg was in first lactation and in last trimester of pregnancy i.e. eight month pregnant was brought to the Veterinary Clinical Complex, College of Veterinary Sciences, Lala Lajpat Rai university of Veterinary and Animal Sciences, Hisar, Haryana. Complete anamnesis revealed continuous regurgitation of ruminal contents in the past 2 days along with coughing. Patient was anorectic and having constipation since 5 days with mucoid discharge from rectum with history of frequent sitting and standing since 20 days indicating colic. Clinical examination revealed normal

temperature, mucous membrane and lymph node. Upon Per-rectal inspection, rectum found empty with hard consistency of rumen and no intestinal ballooning. But patient collapsed during clinical examination.

Postmortem examination of patient was done to know exact etiology behind regurgitation of ruminal contents. Gross examination of carcass showed hemorrhages on the epicardial surface with rounding of apex. Lungs revealed multi focal areas of consolidation and emphysematous patches. Liver was fragile with rounding of edges and distended gall bladder. There is torsion of intestine with two loops at the end of small intestine, post torsion loops were dark reddish in color (Figure 1).

Histopathological examination revealed severe hemorrhages and necrotic changes in the intestinal mucosa and submucosa with leucocytic infiltration. Lungs showed aspiration bronchopneumonia along with neutrophilic in parenchyma. Liver and kidney show degenerative changes. Based on gross and histopathological examination, animal was diagnosed to be suffered from intestinal torsion with necro-hemorrhagic enteritis leading to toxemia.

Discussion

Among the digestive system disorders in cattle, intestinal torsion and intussusception, despite the low incidence, represent serious intestinal clinical conditions. The still underreported etiology of these diseases promotes a consensus of multifactorial cause, (SILVA FILHO *et al*, 2010) [13], it can be associated with management or dietary factors, parasite infection, phytobezoars, enteritis, peritonitis, or electrolyte disturbances [Kahn, 2010] [14] and reported to be occurred more frequently particularly in pregnant and recently parturient cows [Sivaraman, 2016] [11]. Diets rich in carbohydrates can lead to incomplete fermentation in the pre-stomachs, when the contents reach intestine, they are fermented by the flora in the cecum, increasing the concentration of volatile fatty acids (VFA), decreasing the pH in the organ's content and leading to atony, causing the accumulation of gas and liquid (AFONSO, 2017) [15] And also rectal examination findings (e.g., dilated SI loops, absence of feces in the rectum or feces containing blood, mucus, or fibrin) gave an indication about intestinal disorders in cattle. This is in agreement with the findings of earlier workers (Braun, 2012) [5].

In present case, anatomopathological exams were decisive for elucidating the diagnoses of intestinal torsion. Thus, the importance and severity of intestinal torsion in bovines is reiterated, considering the poor prognosis of diseases, as well as the importance of multidisciplinary approach (anamnesis, clinical findings, anatomopathological and complementary exams) to facilitate a correct diagnosis of these diseases.

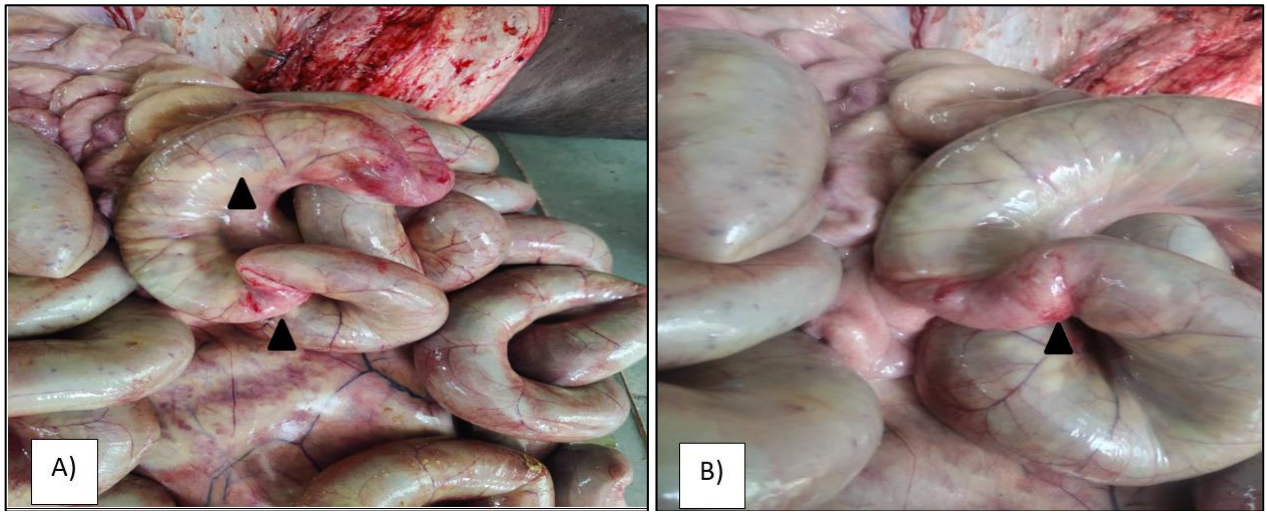

Fig 1: Anatomopathological findings: A & B (arrow) show torsion of loop of small intestine with the presence of a cyanotic halo (arrow head)

Conclusion

In conclusion, intestinal torsion and intussusception, though less common than other bovine digestive disorders, present significant challenges in diagnosis and pose substantial economic losses in dairy production. These conditions, highlighted by their potentially life-threatening nature, underscore the critical need for prompt recognition and intervention. Diagnostic strategies, including thorough anamnesis, clinical assessment, and anatomopathological examinations as demonstrated in this case study, are essential for accurate identification and understanding of these complex gastrointestinal disorders. The multidisciplinary approach advocated here not only aids in diagnosis but also emphasizes the severity of such conditions, urging continued research and management strategies to mitigate their impact on bovine health and productivity.

References

1. Abu-Seida AM, Al-Abbadi OS. Recurrent rumen tympany caused by trichobezoars in buffaloes (*Bubalus bubalis*): A series report. Thai J Vet Med. 2014;44(1):147-151.
2. Anderson DE, Constable PD, St Jean G, Hull BL. Small-intestinal volvulus in cattle - 35 cases (1967-1992). J Am Vet Med Assoc. 1993;203:1178-83.
3. Anderson DE. Surgical diseases of the small intestine. Vet Clin North Am Food Anim Prac. 2008;24:383-401.
4. Bhutia CN, Uppal SK, Hussain SA, Sood NK. Bovine intestinal obstruction: Changes in cytological and biochemical parameters of blood and peritoneal fluid. Exp Anim Med Res. 2019;9(1):37-41.
5. Braun U, Beckmann C, Gerspach C, Hässig M, Muggli E, Knubben-Schweizer G, *et al*. Clinical findings and

treatment in cattle with caecal dilatation. BMC Vet Res. 2012;8(1):75.
6. Dirksen G. In: *Innere Medizin und Chirurgie des Rindes.* Dirksen G, Gründer HD, Stöber M, editor. Berlin: Parey Buchverlag. Krankheiten der Verdauungsorgane und der Bauchwand, 2002, p. 535-539.
7. Kahn CM, Line S. Overview of acute intestinal obstructions in large animals. In:eBook Merck Veterinary Medicine Manual. 10th ed. USA, New Jersey: Whitehouse Station Merck and Co, 2010.
8. Khalphallah A, Abdelhakiem M, Elmeligy E. The ultrasonographic findings of the liver, gall bladder and their related vasculatures in healthy Egyptian buffaloes (*Bubalus bubalis*) Assiut Vet Med J. 2016;62(149):156-162.
9. Radostits OM, Gay CC, Hinchcliff KW, Constable PD. Veterinary Medicine. A Textbook of the Diseases of Cattle, Horses, Sheep, Pigs and Goats. 10. Philadelphia: Saunders Elsevier. Vomiting and regurgitation, 2007, p. 192-193.
10. Ridgway R, Ghirello G, Gillespie A. Diagnosis and management of segmental volvulus of the jejunoileum in a first lactation Flekvieh heifer. Vet Rec Case Rep. 2021;9:e39. https://doi.org/10.1002/vrc2.39.
11. Sivaraman S, Vijayakumar G, Venkatesakumar E. Paralytic ileus due to advanced pregnancy in a cow-a case report. Indian Vet J. 2016;93(6):57.
12. Smith DF. Surgery of the bovine small intestine. Vet Clin North Am Food Ani Prac. 1990;6(2):449-460.
13. da Silva Filho AF, Guimarães IP, Ferreira VP, Armstrong R, Sial AN. Ediacaran Águas Belas pluton, Northeastern Brazil: Evidence on age, emplacement and magma sources during Gondwana amalgamation. Gondwana Research. 2010 May 1;17(4):676-687.
14. Kahn LB. The long-term labor market consequences of graduating from college in a bad economy. Labour economics. 2010 Apr 1;17(2):303-316.
15. Afonso A, Silva I, Meneses R, Frias-Bulhosa J. Qualidade de vida relacionada com a saúde oral: Validação Portuguesa de ohip-14. Psicologia, Saúde e Doenças. 2017;18(2):374-388.