

Clinical Report

Unusual and Severe Ruminant Impaction in a Goat-Kid: Clinical and Radiological Findings

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Abstract

Case description- a goat-kid with anorexia, weakness, depression, reluctant to move, poor condition, and generalized unthriftiness was admitted to the Veterinary Clinic of Shahid Bahonar University of Kerman.

Clinical Findings- body temperature, heart and respiratory rates, hematologic indices including PCV, total and differential WBC and total RBC count were normal. In clinical examination, a ventral abdominal mass was palpable, but not visible. Radiography confirmed presence of dilated stomach which distended with gas or food material and displaced the intestines caudally. According to the history, physical findings, vital signs, hematologic indices and radiography, a severe ruminal impaction was diagnosed which confirmed by exploratory laparotomy and ruminotomy.

Treatment and Outcome- After ruminotomy and evacuation of impacted ingesta, all clinical signs subsided after 10 days.

Clinical Relevance- this case was reported because it illustrates some important consideration when dealing with cases of impaction. While feed impactions are moderately frequent in occurrence, ruminal impaction in goat-kids is rare, but can occur and must be noted.

Key Words- Goat-kid, Rumen, Impaction, unusual, severe.

Introduction

Rumen impaction can occur after dehydration, blockage of the omasal orifice by a foreign body, sand ingestion, or consumption of diets high in fiber and low in digestibility.¹ Clinical signs are not specific, but the firm rumen can usually be palpated in the left flank. The feces may be scant and dry. In addition to developing a firm, distended rumen, animals with rumen

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impaction become dull and listless, appetite is reduced and milk production falls off. There may be mild bloating, and the feces may become scant, dry and mucus covered. Progressive weight loss and debilitation ensue if the condition is recognized and treated. Oral fluids containing magnesium sulfate may loosen impaction, but a rumenotomy is required in severe cases¹. There is some indication that goats develop pica plastic bags and consume them preferentially.² Other foreign materials reported in association with rumen impaction in goats include cloth, leather, twine and rope.¹ Rumen impaction in sheep with indigestible foreign bodies has been described in a semi-arid region of Nigeria.³ This report describes an unusual and severe ruminal impaction in a goat-kid.

History

A goat-kid (15 days-old) with anorexia, weakness, depression, reluctant to move, poor condition, and generalized unthriftiness was admitted to the Veterinary Clinic of Shahid Bahonar University of Kerman. Full clinical examination was performed. Blood samples were taken from jugular vein for further evaluating. Furthermore; lateral radiography was done for detail examinations.

Results

Body temperature, heart and respiratory rates, hematologic indices including packed cell volume, total and differential white blood cell (WBC)(N=6000/ μ L) count and total red blood cell (RBC)(N= 5×10^6 / μ L) count were normal. In clinical examination, a ventral abdominal mass was palpable, but not visible. Radiography confirmed presence of dilated stomach which distended with gas or food material and displaced the intestines caudally (fig1). According to the history, physical findings, vital signs, hematologic indices and radiography a severe and unusual ruminal impaction was diagnosed which confirmed by exploratory laparotomy and ruminotomy (fig 2). After ruminotomy and evacuation of impacted ingesta, all clinical signs subsided after 10 days.



Figure 1- Lateral radiograph of the abdomen revealed severe distention of the stomach. This resulted from prolonged interference with gastric emptying. A fold of the stomach wall can be seen on the lateral view.



Figure 2- Exploratory laparotomy which confirmed severe ruminal impaction.

Discussion

Sheep and goats are selective feeders and substantially less likely to ingest any indigestible foreign bodies than the cattle.^{4,6} The incidence of ingesting foreign bodies is lower in goats than sheep, mainly due to their selective eating habits. However, the most common finding in both species is indigestible pieces of rubbish, especially those made of plastic⁷. Obstruction of the digestive tract has been reported frequently in cattle and has been associated with feeding poor quality roughage. To our knowledge, severe ruminal impaction associated with feeding poor quality roughages in goat-kids has not been reported. Pica has been described in animals, usually in young ruminants. These behaviors are believed to be result of boredom or extended periods of confinement, although nutritional or mineral imbalances may also play a role.⁸ The ingestion of large amount of straw was the cause of impaction in this case. Most of these cases are subclinical⁶ but clinical rumen impaction in sheep with indigestible foreign bodies has been associated with inappetence, foamy salivation, emaciation, abdominal distention and asymmetry, lack of feces in the rectum and recumbency³ which is in agreement with present case. In this study the kids' appetite was affected and it appears that the straw occupied enough space to cause problems. Foreign bodies in the rumen were reported to cause anorexia^{3, 7, 9} which occupied most of the rumen leaving little space for food, that are considered to be the cause of the inappetence.⁷ In addition, decreased appetite may have been due to the physical presence of the foreign body mass and stretch of the cranial sac of the rumen which could stimulate ventromedial hypothalamus and satiety center leading to loss of appetite.^{9, 10} Blood biochemical changes have been reported in some clinical cases of rumen impaction with indigestible foreign bodies in sheep.³ There are no special paraclinical or ancillary tests found in the literature to diagnose soft foreign bodies in the rumen of goats and sheep.¹¹ The position of the impacted material in the rumen contributes more to the clinical impaction than the size and weight of the indigestible foreign bodies. Many large and heavy impacted materials in the rumen do not cause clinical impaction except where the ruminoreticular Orifices are partially or completely blocked by the presence of the materials or pressure.³ It seems that the presence of the impaction in the rumen of the goats did not affect the respiratory and heart rates significantly. There is no direct relationship between the presence of the foreign body in the rumen and respiratory and heart rates, except for the physical pressure exerted by the foreign body on the chest.⁹ In conclusion, the presence of though, hard and poor quality roughages, especially straw in the rumen can cause severe impaction in kid-goats which lead to clinical signs, but vital signs and hematology were

unchanged. Severe ruminal impaction must probably be considered a surgical condition. Medical management used for impactions, cannot be expected to be of any help. This case was reported because it illustrates some important consideration when dealing with cases of impaction. While feed impactions are moderately frequent in occurrence, ruminal impaction in goat-kids is rare, but can occur and must be noted.

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انباشتگی غیر معمول و شدید شکمبه در یک راس بزغاله: یافته های بالینی و رادیوگرافی

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توصیف بیمار - بک بزغاله با نشانه های بی اشتها، ضعف، افسردگی، عدم تمایل به حرکت، وضعیت بد بدنی و عدم رشد به کلینیک دانشکده دامپزشکی دانشگاه شهید باهنر کرمان ارجاع گردید.

یافته های بالینی - دمای بدن، تعداد ضربان قلب و تنفس، اندیس های خونی شامل هماتوکریت، تعداد کل و تفریقی گلبولهای سفید و تعداد کل گلبولهای قرمز در محدوده طبیعی قرار داشتند. در معاینه بالینی یک توده شکمی که قابل رویت نبود، لمس گردید. رادیوگرافی وجود معده که با گاز یا مایع متسع شده بود را تایید کرد. با توجه به تاریخچه، نشانه های بالینی، علائم حیاتی و اندیس های خونی و رادیوگرافی، انباشتگی شدید شکمبه تشخیص داده شد که لاپاراتومی اکتشافی و رومینوتومی آن را تایید کرد.

درمان و نتیجه آن - بعد از رومینوتومی و تخلیه محتویات انباشته شده، تمامی نشانه های بالینی در عرض مدت ۱۰ روز فروکش نموده و دام بهبود یافت.

کاربرد بالینی - گزارش این انباشتگی نشان دهنده اهمیت آن در نوزادان می باشد. اگر چه وقوع انباشتگی های ناشی از مصرف مواد خشبی بی کیفیت در دامها به فراوانی رخ می دهد، اما وقوع انباشتگی در نوزادان دامها نادر بوده و باید مورد توجه قرار گیرد.

کلید واژگان - بزغاله، شکمبه، انباشتگی، غیر معمول، شدید.