JAPR

***Vol. 01, Issue, 02, pp. 5-6, February, 2024***


**CASE REPORT**

# Pulpy Kidney Disease: A Looming Threat to Kids - A Case Report

Umer Farooq [a] *, Yousuf Ali Khan [a] , Rahmat Ullah [a]

[a] *Faculty of veterinary & Animal Sciences, Gomal university Dera Ismail khan, Pakistan.*

**ARTICLE INFO**

***Article History:***
Received 1 *January*, 2024
Received in revised form 12 *February*, 2024
Accepted 15 *February*, 2024
Published online 14 *February*, 2024

***Keywords:***
*Clostridium perfringens*
*Enterotoxaemia*
*Goat*
*Pulpy Kidney Disease*

Corresponding author: Umer Farooq
*E-mail addresses:*
*Umer602.khan@gmail.com*

**ABSTRACT**

Enterotoxaemia, also known as pulpy kidney disease, is a bacterial gastrointestinal illness caused by *Clostridium perfringens* type D, typically residing in the gastrointestinal tract of animals. This condition arises when there is a sudden dietary shift, such as the transition to lush green pasture or the introduction of grain feeding, leading to the proliferation of the organism and the production of a lethal amount of epsilon toxin. Symptoms include fever, bloody diarrhea, pale mucous membranes, teeth grinding, blurred vision, and reduced milk production, with systemic lesions notably observed on the kidneys, resulting in nephritis and earning the condition its nickname, pulpy kidney disease.



## 1. Introduction

Enterotoxaemia Pulpy Kidney Disease (EPKD) is a significant concern in the realm of livestock management, particularly among sheep and goats [1]. This bacterial infection, caused by Clostridium perfringens type D, poses a substantial risk to animal health and economic stability within agricultural communities [2]. EPKD manifests with devastating symptoms, including fever, bloody diarrhea, opisthotonos, stretching their bodies at walking and standing and often leading to sudden death in per-acute cases [3, 4]. Understanding the etiology, predisposing factors, and preventive measures against EPKD is paramount for safeguarding livestock populations and ensuring sustainable agricultural practices. In this context, exploring the intricacies of EPKD becomes crucial for veterinarians, farmers, and policymakers alike, as they strive to mitigate its impact and preserve the well-being of animal populations worldwide [1, 3].

## 2. Materials and Methods

Conducting a postmortem examination, especially on a goat, requires careful attention to detail. Here's a general overview of the process:

### 2.1 External Examination

Start by observing the body externally. Look for any signs of injury, trauma, or abnormalities. Note the body condition, rigor mortis, and any external parasites.

### 2.2 Opening the Body

Make a midline incision from the chin to the tail, cutting through the skin and muscle layers. Use caution to avoid damaging internal organs.

### 2.3 Internal Examination

#### 2.3.1 Thoracic Cavity

Start with the thoracic cavity. Examine the heart, lungs, and trachea. Look for signs of pneumonia, lung congestion, or other respiratory issues.

#### 2.3.3 Abdominal Cavity

Proceed to the abdominal cavity. Examine the stomach, intestines, liver, spleen, and kidneys. Look for signs of inflammation, parasites, or abnormalities.

### 2.4 Organs Examination

#### 2.4.1 Heart

Check for signs of disease, such as enlargement or damage.

**2.4.2 Lungs**

Look for signs of pneumonia, lung congestion, or other respiratory issues.

**2.4.3 Liver**

Note any abnormalities, such as discoloration or lesions.

**2.4.4 Kidneys**

Check for signs of disease or damage.

**2.4.5 Sampling**

Collect samples of organs or tissues for further analysis, such as histopathology or microbiology, if needed.

**2.4.6 Recording Findings**

Document all findings, including measurements, observations, and any samples taken.

## 3. Results

A deceased four-month-old kid was presented to the clinical medicine department with no prior history of illness. The sudden death prompted an investigation into the cause, which revealed petechial hemorrhages on the myocardium, watery intestinal contents, and hemorrhages in the small intestine and colon, along with the characteristic softness of both kidneys indicative of enterotoxaemia.

## 4. Discussion

Clostridium perfringens type D, a gram-positive anaerobic pathogen, is responsible for this condition in sheep and goats. The bacterium secretes epsilon toxin, leading to enteritis and toxemia [4]. Predisposing factors include dietary changes and pathogen burden. In goats, the disease manifests in acute, subacute, or chronic forms, with the acute form predominantly affecting young, unvaccinated animals, while the subacute form can affect vaccinated adults [5]. Enterotoxaemia poses significant economic risks, particularly in unvaccinated flocks, with overeating being a common predisposing factor [2, 6].

## 5. Conclusion

Vaccination and avoiding sudden dietary and environmental changes are crucial for preventing this disease in flocks. Acknowledgments: We extend our gratitude to Mr. Ihtesham Ali for his assistance in conducting the postmortem examination.

**Acknowledgement:** We appreciate Mr Ihtesham Ali for assisting us in doing Post mortem of the kid.

**Date availability statement:** No supplementary data is available.

**Ethics approval statement:** Not applicable.

**Funding:** Not applicable

**Authorship contribution statement:** The study's conceptualization, design, preparation of the materials, data collection, analysis, and paper writing were all done by the authors.

## References

[1]. Jemal D, Shifa M, Kebede B. ( 2016) .Review on pulpy kidney disease. J. Vet. Sci. Technol.;7(5):361.

[2]. Hussain R, Guangbin Z, Abbas RZ, Siddique AB, Mohiuddin M, Khan I, Rehman TU, Khan A (2022). Clostridium perfringens types A and D involved in peracute deaths in goats kept in Cholistan ecosystem during winter season. Frontiers in Veterinary Science.

[3]. Renu HD, Mathur M, Rani S, Boyal P, Mehra M, Asopa S (2021). Pathological study of kidneys in Clostridium perfringens type D enterotoxemia in sheep. J Entomol Zool Stud. 1395-97.

[4]. https://www.agric.wa.gov.au/livestock-biosecurity/pulpy-kidney-enterotoxaemia-sheep

[5]. Maxie, Grant. Jubb, Kennedy & Palmer's pathology of domestic animals: volume 2. Elsevier health sciences, 2015.

[6]. Uzal, F. A., Giannitti, F., Finnie, J. W., & García, J. P. (2016). Diseases produced by Clostridium perfringens type D. *Clostridial Diseases of Animals; Wiley Blackwell: Ames, IA, USA*, 157-172.