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Full Length Research Article

MANAGEMENT OF THEILERIOSIS IN A 5-YEAR-OLD SUDANESE RACING HORSE (ALBADAR): CASE STUDY FROM GUMEL, JIGAWA STATE, NIGERIA

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ABSTRACT
Theileriosis is a significant tick-borne protozoal disease affecting equines in many tropical and subtropical regions. Clinical signs can vary from mild fever and anaemia to severe debilitation, depending on the species, strain, and host factors. This case report documents the diagnosis, treatment, and outcome of theileriosis in a 5-year-old Sudanese racing horse, Albadar, in Gumel, Jigawa State, Nigeria. A case presentation involved a 5-year-old male Sudanese racing horse that showed decreased exercise endurance, occasional high temperatures, pale mucous membranes, and a tick infestation. A clinical examination, haematology tests, blood biochemistry, blood smear examination under a microscope, and the response to mesotherapy all supported the diagnosis of theileriosis. Treatment entailed antiprotozoal therapy (Intramuscular imidocarb dipropionate (2.0 mg/kg) was administered for 48 hours), supportive care (fluid therapy and iron/vitamin supplementation), and acaricide application. The horse responded well with clinical improvement within 72 hours and full recovery within 3 weeks. Early detection, prompt antiprotozoal treatment, acaricide therapy, and supportive care can lead to positive results in equine theileriosis cases. Routine tick control and surveillance are crucial in Nigerian racing stables, as this case demonstrates.

Keywords: Theileriosis, Horse, Equine, Protozoal infection, Ticks, Nigeria, Case report.

INTRODUCTION

Equine theileriosis is a serious tick-borne disease resulting from infection by the protozoan parasite (Tirosh-Levy *et al.*, 2020). *Theileria equi*, a protozoan parasite, is one of the primary causes of equine piroplasmosis (Schnittger *et al.*, 2022). The disease, prevalent in sub-Saharan Africa and most tropical and subtropical countries, continues to pose a threat to equine health and the equine industry as a whole (Bonsi *et al.*, 2023). The major route of transmission is through ixodid ticks of the genera *Rhipicephalus*, which are widespread in these areas (Kaba *et al.*, 2022). After an infection, the parasite invades and multiplies within the lymphocytes and erythrocytes of the horse, ultimately resulting in haemolytic anaemia (Ramadan *et al.*, 2024).

The clinical symptoms of theileriosis display a broad spectrum of severity, ranging from mild, unidentified infections to severe, potentially life-threatening conditions (Arun, 2017). These symptomatic infections are characterised by fever, anaemia, jaundice, and depression (Takeet *et al.*, 2009). Typically, these clinical signs are accompanied by a noticeable decline in athletic performance and a lack of tolerance for exercise, resulting in substantial financial losses for owners and training facilities (Rothschild, 2013). In high-pressure environments such as racing stables, factors including intense training and overcrowding can lead to clinical symptoms developing from initially mild, asymptomatic infections (Tirosh-Levy *et al.*, 2020).

In a country where the disease is endemic, such as Nigeria, equine practitioners encounter a substantial challenge in managing theileriosis. Due to early signs often being non-specific and therefore at risk of being overlooked, a high level of clinical suspicion is adopted as a strategy to prevent timely, critical intervention from being hindered (Mendoza *et al.*, 2024). This report outlines the clinical signs, diagnostic confirmation, and successful treatment of an infection resulting from *Theileria equi* in a 5-year-old Sudanese horse from Gumel Local Government Area, Jigawa State, Nigeria. The situation underscores the necessity for immediate diagnosis and thorough treatment in high-risk areas to restore animal health, contain the spread of disease, and alleviate the substantial economic repercussions faced by the local horse sector.

MATERIALS AND METHODS

Case Presentation

A 5-year-old Sudanese racing horse, weighing approximately 300 kg and based in Gumel, Jigawa State, had shown a gradual decline in its racing performance over the past two weeks. The owner observed symptoms of vulnerability, decreased hunger, and intermittent lack of coordination. Upon closer examination, a number of ticks were found on the horse's body. No recent records of deworming or vaccination were found, and identical symptoms were observed in other horses housed at the same stable. The case sparked strong suspicions of a tick-borne haemoparasite infection.

Clinical Examination

A physical examination revealed an elevated body temperature of 41°C, a heart rate of 75 beats per minute, a respiratory rate of 21 breaths per minute, and a capillary refill time of two minutes. The patient's mucous membranes had a pale and yellowish appearance, and they displayed lethargy and unsteadiness in movement, reduced appetite, and swollen lower limbs.

Differential Diagnoses

Given the sudden onset of fever, jaundice (haemolytic anaemia), and confirmed tick exposure in a region where the disease is

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common, the initial differential diagnoses considered were: equine piroplasmosis, caused by *Theileria equi* or *Babesia caballi*, and equine granulocytic anaplasmosis due to *Anaplasma phagocytophilum*.

Diagnostic Work-up

A blood sample was collected for haematology, serum biochemistry, and microscopic examination. Haematology analysis revealed a packed cell volume (PCV) of 32.9%, confirming anaemia. There was also a mild leucocytosis with neutrophilia. Serum biochemistry disclosed elevated liver enzymes (GGT: 37.8 U/L, ALP: 264 U/L) and creatinine (3.25 mg/dL). Hypoglycaemia (55 mg/dL) and hypocalcaemia (9.6 mg/dL) were noted as well (Table 1).

For a confirmatory test, microscopic examination of Giemsa-stained blood smear was positive for intraerythrocytic piroplasms with pyriform and amoeboid morphologies characteristic of *Theileria equi* (Figure 1). Parasitaemia on presentation was estimated at 1-2%.

Table 1: Serum Biochemistry Result

Parameters	Results	Flag	Reference Range
TP	6.4		5.7 – 8
ALB	3.3		2.2 – 3.7
GLO	3.1		2.7 – 5.0
A/G	1.1		
TB IL	1.72		0.5 – 2.3
AST	325		175 – 340
GGT	37.8	High	0 – 25
ALP	264	High	0 – 170
CK	227		120 – 470
GLU	55	Low	65 – 110
CRE	3.25	High	0.6 – 2.2
BUM	8.39		7 – 25
BUM/CRE	3		
tCUZ	29		20 – 33
Ca	9.6	Low	11.2 – 14.4
K+	3.96		2.5 – 5.2
Na+	139		126 - 146
Na+/K+	35		

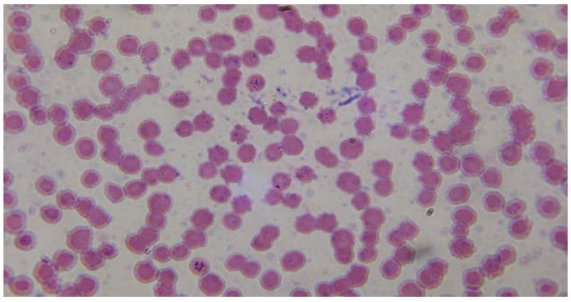

Figure 1: Photomicrograph of a Giemsa-stained blood smear showing erythrocytes containing intraerythrocytic piroplasms (arrows) morphologically compatible with *Theileria equi.*

Treatment and Management

The therapeutic and management protocol was initiated as follows:

Specific antiprotozoal therapy: Intramuscular imidocarb dipropionate (2.0 mg/kg) was administered for 48 hours.

Supportive Care: Flunixin meglumine (1.1 mg/kg IV every SID for 3 days) for antipyretic and pain management. Intravenous fluid therapy (Lactated Ringer's Solution, 4 L daily for 3 days) was administered to ensure renal perfusion and hydration. Oral vitamin C (20 g/day × 5 days) and a preparation of multivitamin with B12 (60 mL orally × 3 weeks) were used as adjuvant haematinics and antioxidants.

Stable Management: The patient was isolated, and a rigorous stable-wide tick control program was implemented to prevent secondary transmission.

Outcome and follow-up

Significant improvement in the patient's condition was observed within 48-72 hours, with a resolution of fever and the return of appetite. Clinical parameters and PCV monitoring showed a gradual improvement over time. A blood smear taken on day 14 showed a significant decrease in parasitaemia to 0.1%. The percentage of PCV rose to 37.9% by day 7. *Albadar* resumed light training by the third week, and full training by the sixth week, following treatment, with all clinical signs cleared.

DISCUSSION

Equine theileriosis is a serious tick-borne disease resulting from protozoan parasite infection (Ceylan et al., 2021). The infection is primarily caused by *Theileria equi* (Schnittger *et al.,* 2022). This report presents the successful treatment of acute equine theileriosis in a Sudanese racing horse in Gumel, Jigawa State, Nigeria. The clinical presentation of fever, anaemia, icterus, and loss of performance coupled with the finding of intraerythrocytic piroplasms on blood smear is characteristic of *T. equi* infection (Agina, 2017, and Adedokun *et al.*, 2022). This case illustrates the severe threat that this endemic disease poses to the equine industry in the tropics, particularly in high-stress environments such as racing stables, where tick exposure and exercise can precipitate clinical outbreaks from subclinical infections.

The treatment protocol chosen, which was imidocarb dipropionate-based, was very effective despite not being the world-recommended first-line drug (e.g., buparvaquone). Imidocarb is an anti-protozoal agent against piroplasms and also enjoys prolonged tissue levels, which were likely the cause of the remarkable clinical improvement within 48-72 hours and the ultimate elimination of parasitaemia (Saleem *et al.*, 2025). As evidenced by the rising PCV, aggressive supportive treatment, including anti-inflammatory therapy, fluid therapy, and haematinics, helped to abort the haemolytic crisis, maintain renal function, and enhance haematological recovery.

Limitations

This case highlights the limitations of diagnostic and therapeutic methods in areas with limited resources. The final diagnosis was made using blood smear microscopy, a method commonly found in field clinics, but with lower sensitivity and specificity than molecular detection, like polymerase chain reaction (PCR). The confirmation of PCR results was necessary to determine the final species type and genotype, which could be crucial for local epidemiology and potential drug resistance. Treatment was determined by the locally available drugs rather than an ideal regimen based on guidelines.

Conclusion

Despite these limitations, the result in "*Albadar*" was outstanding,

showing that a structured approach utilising available resources can be effective. An integrated proactive approach is necessary to reduce the effects of theileriosis in areas where the disease is common, including Nigeria. All training facilities should adopt a mandatory, systematic tick control regime that involves acaricide rotation, in addition to good hygiene practices.

Recommendations

Polymerase chain reaction (PCR) and serology testing of incoming and suspected horses are recommended wherever possible to pinpoint carrier horses and facilitate targeted control measures. Ensuring the constant availability of efficient antiprotozoal medications like imidocarb is crucial, and standard treatment guidelines need to be developed for their safe and effective use locally. Ensuring the constant availability of efficient antiprotozoal medications, such as imidocarb, and developing local standard treatment guidelines for their safe and effective use.

Ethical Statement

Informed consent for the procedures and publication of this case report was provided by the owner/trainer of "Albadar". A licensed veterinarian performed all clinical procedures within normal veterinary practice and within ethical guidelines.

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