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Strawberry Footrot in a Blackbellysheep in the Ecuador Amazonia

A. C. Riofrío¹, J. C. Lopez¹, J. C. Moyano¹, R. Quinteros¹, P. R. Marini^{2,3} & M. L. Fischman⁴

¹Universidad Estatal Amazónica-Centro de Investigación, Posgrado y Conservación Amazónica - Ecuador.

²Facultad de Ciencias Veterinarias-Universidad Nacional de Rosario, Argentina.

³Consejo de Investigaciones (CIUNR), Facultad de Ciencias Veterinarias, Universidad de Buenos Aires, Argentina

⁴Facultad de Ciencias Veterinarias, Universidad de Buenos Aires, Argentina

Correspondence: Andrea C. Riofrío, Universidad Estatal Amazónica-Centro de Investigación, Posgrado y Conservación Amazónica - Ecuador. E-mail: andrearcmsphm@gmail.com

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Abstract

Dermatophilosis is an acute or chronic disease of the epidermis characterized by inflammatory, exudative and bleeding lesions with scabs, caused by the bacterium *Dermatophilus congolensis*. It affects bovine, ovine, equine, cattle, goats, wild animals and also humans when it is considered a minor zoonosis. This work is about a case caused by *Dermatophilus congolensis* in a sheep from Ecuadorian Amazonia. The affected sheep presented lameness with non itchy lesions in its right front limb, bleeding and painful at first. An exudate culture was taken to the laboratory. The samples were processed for a bacteriological diagnosis. Based on the clinical symptoms together with the lab results, *Dermatophilus congolensis* was diagnosed. It was treated with Benzathine Penicillin 100,000 UI, each dose of 10,000 UI / kg PV, every 48 hours, in 5 consecutive applications combined with Tolfenamic Acid 8gr. In doses of 2mg / kg, that is to say 1 ml / 40 Kg PV every 48 hours. 10 days after the beginning of the treatment, the lameness and the pain lessened and the animal tried to set its limb on the ground.

Keywords: Dermatophilosis, ovine, clinical symptoms, clinical diagnosis, diagnosis, treatment

1. Introduction

Dermatophilosis is an acute or chronic disease of the epidermis characterized by inflammatory, exudative and bleeding lesions with scabs, caused by the bacterium *Dermatophilus congolensis* (Stewart, 1972; Hirigoyen y Bermúdez, 1992). It affects bovine, ovine, equine, cattle, goats, wild animals and also humans when it is considered a minor zoonosis. In ovines, it affects the wool covered parts of their bodies such as the lumbar and cervical area, and in the flanks called *Lumpy Wool*, lesions can be observed in the head –mainly in the ears - and in the corners of their mouths. In rams it appears in the scrotum area and in the limbs from the ribs till the tarsal or carpal area called *Strawberry Foot Rot* (Stewart, 1972; Kruze, 1979), the name comes from the bleeding area the scab leaves between the toes after falling off. One study carried out in Ethiopia (Woldemeskel and Ashenafi, 2003) analysing 520 sheep, showed that three per cent had *Dermatophilus congolensis* and proved that there was no statistically significant association between the skin disease and the age or gender of the sheep. The environmental characteristics of the Amazonian area –with 4,000 mm / year rainfall, 80 % average relative humidity and temperatures between 15 and 25 °C, steep cliffs, and an altitude of between 580 and 990 metres over sea level – make it prone to develop *Dermatophilus congolensis*. However, the Blackbelly long haired sheep have adapted well to the weather and this pathology is not usually seen. That is why, the objective of this work was to report a clinical case of *strawberry foot rot* in a Blackbelly sheep of the Ecuadorian Amazonia.

2. Materials and Methods

The case appeared in a 28-month-old long haired Blackbelly sheep, 39.9 kgs heavy and 60-day pregnant with no offspring calf, belonging to the fold of the Centre of Investigation, Postgraduate and Conservation of Amazonian Biodiversity (CIPCA). This centre is located in the region Arosemena Tola in the province of Napo (Ecuador), at kilometer 44 in the Puyo-Tena way (coordinates: S 01° 14.325'; W 077° 53.134') and it has 3 hectares of land devoted to ovine milking. Its topography consists of mainly lowlands with no steep slopes, distributed in huge natural plateaus. The altitude varies between 580 and 990 meters over sea level. Even though the soil presents a highly heterogeneous composition, most of it is originated in fluvial sediments which come from the Andes region of the country. The CIPCA has a fold of 12 sheep which are raised under the same environmental,

nutritional and handling conditions. In January 2016, one sheep was observed to present a claudication in its right front limb. An extensive semiological exam was carried out (RC: 80/min, FR:18/min CC: 2,6 Temperature 39,1°C). Afterwards, the area was sterilized and the tissue surplus of the cornea was taken out for a closer observation and samples were taken from the affected area in order to isolate the causative agent using a sterilized cotton swab; it was then put into an aerobic and anaerobic culture tube and was finally taken to the laboratory. The presumed diagnosis was infectious dermatitis, based on the history of the fold, the epidemiological characteristics and the clinical aspects presented by the affected sheep. There were no reports of previous outbreaks.

3. Results and Discussion

While waiting for the results of the antibiogram, a treatment was started in order to avoid physical deterioration and calm the animal's pain. The treatment consisted in the application of cephalosporine 2gr in a 1ml / kg of liveweightdosis for four consecutive days, combined with Tolfenamic Acid 8 gr in dosis of 2mg / kg liveweight, that is to say 1ml / 40 kg of PV every 48 hours (AINE – non steroidal anti inflammatory). The animal presented no improvement. In the colour smears by Gram and Giemsa, there appeared a big quantity of cocosand filaments Grampositive, ramified, with the typical aspect of a *Dermatophiluscongolensis*. In the radiograph, yellow wrinkled colonies with a halo of beta hemolysis were identified. Having the results of the antiobiograma (Table 1) the animal was treated with BenzathinPenicilin 100,000 UI, each doses of 10,000 UI / kg PV, every 48 hours, in 5 consecutive applications combined with Tolfenamic Acid 8gr, in doses of 2mg / kg, that is to say 1 ml / 40 Kg PV every 48 hours (AINE – non steroidal anti inflammatory). Ten days after the beginning of the treatment, the claudication lessened and pain relief was observed taking as a parameter the animal setting its limb on the ground. As a complement of the second treatment, an environmental treatment was also carried out; it consisted in the improvement of the indoor fold ground, disinfecting it, taking the humid material out and using dry material. After the treatment was started, the patient recovered favorably. Based on the clinical symptoms, the lesions and the laboratory findings, the diagnosis reached was *Dermatophiluscongolensis*. The lesions the affected animal presented coincided with the ones described in the bibliography. On the other side, the heavy rains of the region are an underlying factor for the disease to occur (Stewart, 1972). In bovines, the dermatophilosis appears at all ages, but it is more common in young animals.

Table 1.

| Diagram | Measures | Sensitivity | Interval | Resistance |
|--------------------------|----------|-------------|----------|------------|
| Halo diameterfor: | | | | |
| Peniciline | 3.5 cm | x | | |
| Amikacine | 2.8 cm | | X | |
| Eritromicine | 1.5 cm | | | x |
| Gentamicine | 3.5 cm | x | | |
| Nitrofurantoin | 2 cm | | | X |
| Ampiciline | 2 cm | | | X |

4. Conclusion

Being this the first case of Strawberry Foot Rot en el CIPCA, the appropriate treatment and the handling measures succeeded in controlling the disease and avoiding the death of the sheep. It is important to highlight that the medical treatment had to be accompanied with the appropriate environmental handling in order to accelerate the recovery process.

The results en courage to use this drug against future cases that may appear in herds in the Ecuadorian Amazon.

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