

BOVINE BESNOITIOSIS: A CASE REPORT IN SICILY

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INTRODUCTION. Bovine besnoitiosis is a parasitic disease caused by the tissue cyst-forming protozoan *Besnoitia besnoiti*. The European Food Safety Authority (EFSA) has reported that bovine besnoitiosis is re-emerging in Europe [1]. It represents a chronic and debilitating disease that is responsible for severe economic losses such as poor body condition, decreased milk production, infertility in bulls and occasional abortion [2]. Autochthonous outbreaks of the disease were reported in Central Italy for the first time in 2009 [3]. In Sicily, although the disease was observed in a heifer in 2014 [4], no epidemiological data is known.

AIM OF THE WORK. This study describes an autochthonous outbreak of Bovine besnoitiosis in North-Western Sicily: a bull that shows typical clinical symptoms related to bovine besnoitiosis and moreover, the serological investigation of the herd, suspected of being infected by *B. besnoiti*.

MATERIALS AND METHODS. In a 16-month-old affected bull, clinical status was evaluated both in acute and chronic stage. After slaughtering, samples of skin, conjunctiva, tongue, and tendons were collected for histopathological examination. Furthermore, in the bull and in the Limousine herd of 72 animals, serological investigation using ID Screen® *Besnoitia* Indirect 2.0 ID.vet was performed.

RESULT. The bull showed typical clinical signs of besnoitiosis such as: high fever, diffuse oedema at the joints of limbs and scrotum, hyperemia of muzzle and eyes, orchitis, thickening of the nasal planum and wheezing. About 10-12 days later, skin lesions (hyperkeratosis, alopecia, dandruff and scab) appeared (Figure 1).

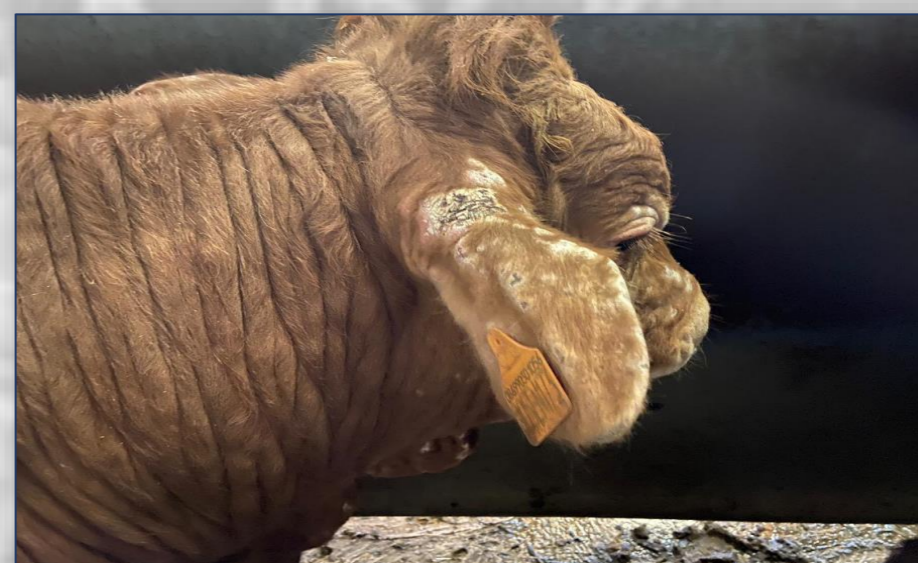


Figure 1. Bull with hyperkeratosis, alopecia and scab.

At the 58th day after the beginning of the first signs, the animal showed diffuse skin thickening, was emaciated and reluctant to move. Histological examination showed multifocal-coalescing thick-wall cysts surrounding parasitophorous vacuole containing thousands of banana-shaped bradyzoites all the collected samples (Figure 2-3).

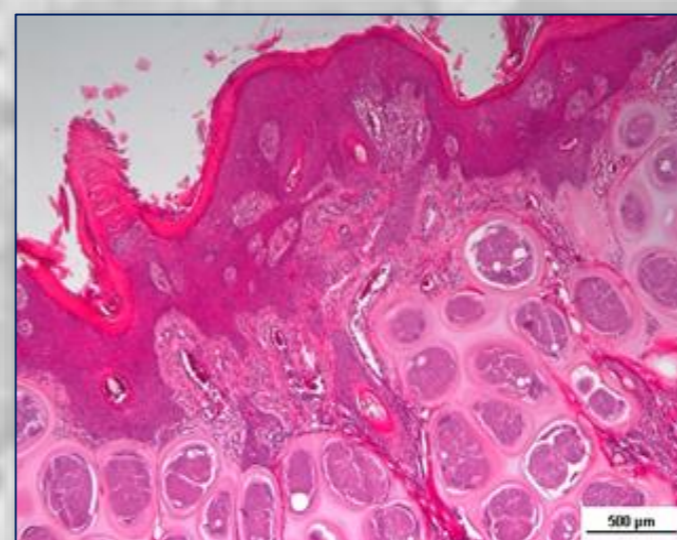


Figure 2. Skin sample, large number of parasitophorous cysts. EE, 2,5 X.



Figure 3. Cysts in testicle sample. EE, 10X.

ELISA confirmed the seropositivity of the bull, moreover, 79,17% of the herd resulted positive (Tab 1).

Year of birth	Age	Number and sex
2008 - 2012	13 - 9 y	11 ♀
2013 - 2017	8 - 4 y	21 ♀
2018 - 2021	3 - 1 y	24 ♀, 1 ♂

Table 1. Distribution of seropositive by age and sex in the herd.

CONCLUSION. Finally, since all the animals were born in the farm or were bought from nearby farms this case confirms the presence of autochthonous *B. besnoiti* also in Sicily and may contribute to a further epidemiological study in this area.

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