

Few cases of *balanopostitis* of European bison males in Spain

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Abstract: Until now in Spain reported were 6 confirmed cases and 1 uncertain of male *balanopostitis* in European bison. Four cases were diagnosed on the basis of symptoms and confirmed in necropsy while 2 cases were diagnosed basing on symptoms, animals were treated and both are still alive. An animal classified as an uncertain case also remains alive. Four of diagnosed European bison originated from the Lowland line, and 2 from Lowland – Caucasian line. All those individuals were imported to Spain from abroad. So far no E. bison born in Spain has been infected.

Key words: *Balanopostitis*, disease cases, Spain, European bison, conservation

Introduction

Contemporary populations of European bison are threatened by various disease factors (Kita and Anusz, 2006; Glunz 2008; Keşik-Maliszewska *et al.* 2014). Some infectious diseases typical for domestic and wild ungulates like foot and mouth disease are less dangerous, but others like *posthitis* or in advanced cases *balaposthitis* – a disease occurring in E. bison, involving inflammation of the prepuce and leading to infertility is difficult to diagnose. Up to now there is also no answer about the source of disease, probably some infectious as well as environmental factors could be important. This disease was observed mostly in the population roaming in Białowieża Forest, but also was found in few animals from other herds (Kraśnińska and Kraśniński 2010).

Symptoms *in vivo*

The diagnose of *balanopostitis* is based on 5 first symptoms:

1. **Emaciation.** As general symptom, it occurred in all affected animals, but in 3 cases its typical appearance could be seen. Thinness in the hindpaw, swelling belly of ascites type and slightly marked ribs. Appearance of neck and chest remained normal. Noticeable was the delay or lack of seasonal change of the coat.
2. **Foreskin bump.** This bump seems to be full of liquid as a local edema, probably because of pus clogging the urine output and causing of it accumulation. Addi-

tionally it may be a result of local inflammation. Visible is swelled belly, but there are no signs of emaciation at ribs and hindquarters.

3. **Hanging purulent exudate.** Usually accompanying the foreskin bump, some pus can be seen hanging from the foreskin hole, but not always present (Fig 1 a, b). The animal at this picture has died 2 months later.

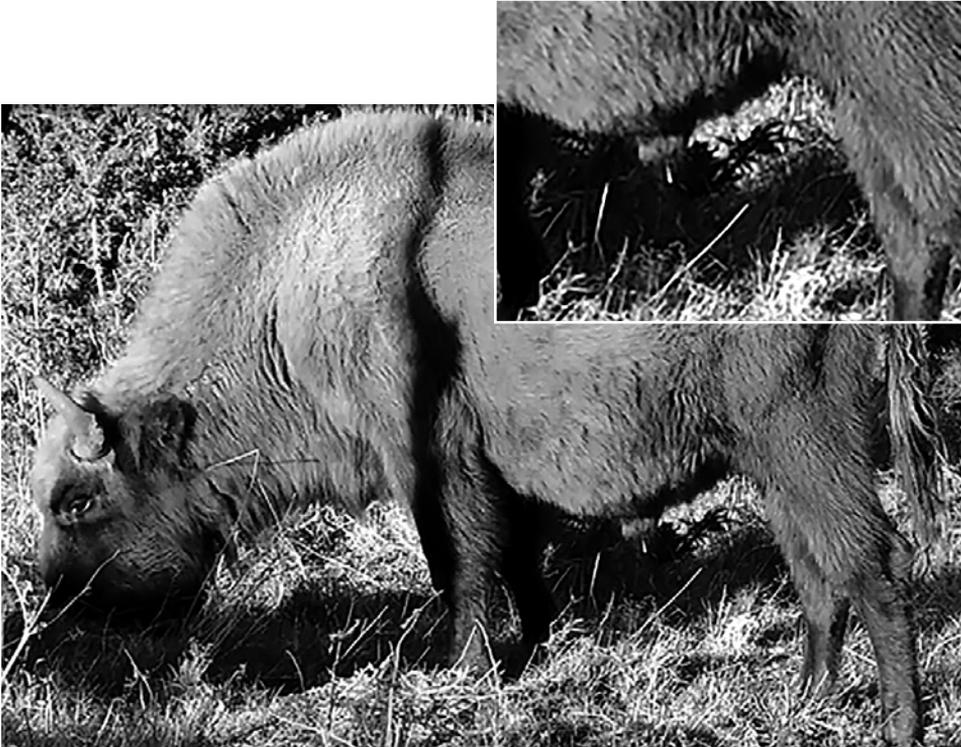


Figure 1 (a, b). European bison with foreskin bump and hanging purulent exudate at Zapurrel in Asturias

4. **Urine leakage.** Can be observed as uncontrolled, continuous urine dripping regardless from the level of stress of the animal. gets stressed. Urine is clear which indicates that the excretory system is not affected.
5. **Foreskin hairballs.** Such balls are composed of hair, dirt, mud and pus Due to the urine leakage these hairballs are always humid.
6. **Change of behavior.** Affected dominant males lose their social position and even after successful treatment do not regain it again regardless of their size or body condition. Subdominant individuals tend to stay away from the herd.

In period of three years seven such cases were noticed in Spanish breeding centers. Four males died and three other survived (tab. 1).

For four animals recorded were the date of death, and necropsy was done.

Table 1. Cases of *balapothitis* observed in Spanish breeding herds of European bison

Date first diagnose	Origin	Age	Line	Diagnosis								Behavior change	Medical care	Dead	Necropsy
				Emaciation	Foreskin bump	Pus hanging thread	Urine leakage	Foreskin Hairballs							
08/06/2012	Lelystad	2	LB	Severe	No	No	Yes	No	Yes	No	??	Ab	12/06/2012	+	
21/12/2012	Lelystad	3	LB	Little	Yes	Yes	Yes	Yes	Yes	Yes	??	No	22/02/2013	+	
No	St Croix	14	LC	Medium	No	No	No	No	No	No	No	No	08/12/2015	+	
24/06/2015	Pszczyna	6	LB	Little	Yes	No	Yes	No	Yes	No	Yes	Ab	alive		
21/11/2015	Lelystad	6	LB	Medium	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Ab	alive		
25/11/2015	HanSudlesse	8	LC	Little	Yes	No	Yes	No	Yes	No	??	No	24/02/2015	+	
27/11/2015	Lelystad	2	LB	Median	Yes	No	No	No	No	No	??	Ab	alive		

Results of necropsy

According to necropsy animals were considered positive or negative depending on the specific lesions found. Specific lesions are foreskin and penis putrefaction. Also signs of infection can be found in urethra and testicles (Fig. 2 a,b,c).



Figure 2 (a,b,c) The lesions found in necropsy of 3 different males.

Treatment and its results

The doubtful case is the male from Pszczyna (Fig. 3), which had a fight with another male, so perhaps lesions in penis and foreskin could possibly be produced by an injury. This individual originally was suspected to develop *balanopostitis*, but perhaps following the trauma connected with the loss of reproductive parts, the illness did not proceed. He was treated twice with 20ml tetracycline 300, once when first diagnosed and another time 21 days later.



Figure 3. Doubtful case of male at San Cebrian, that lost his reproductive parts but otherwise remained healthy

Young bison from Lelystad in Boñar-León, two years old (Fig. 4), was treated with augmentine combined with human antibiotic (1.000 mg amoxiciline and 62.5 mg clavulanic acid) for 5 days with 1,5 doses every day. This treatment was provided in January 2016 and this bull remained alive (June 2016), still with the foreskin bump (visible at the photo) but no demonstrating any other symptoms. His seasonal change of coat after winter was delayed.

For older male (six years old) from Lelystad in Asturias (Fig. 5), selected was the treatment with 500 mg noroclav tablets (400 mg amoxiciline and 100 mg clavulanic acid) administered also twice, every time for one week. Every day he received 2.5 tablets. This individual, after suffering emaciation for several months, started to



Figure 4. Young male from Lelystad in Boñar-León



Figure 5. European bison after medical treatment in Asturias, with summer coat

recover and presently he remains in very good condition but he has lost his behavior of a reproductive male. However his penis and foreskin area were completely liquefied resulting in an open wound, later covered with skin. Now he urinates 5 cm below the anus where development of *posthitis* has stopped and the end of urethra remains.

Conclusions

The origin and the cause of *posthitis* in European bison still remain unknown. In some cases important seems to be the origin of animals. However, symptoms are well described and can be effectively used to identify early stages of this illness. Necropsy provides its final confirmation. In some cases, a successful treatment with various composition of antibiotics has been obtained, which may provide basis for an effective approach to this problem in closed breeding centres.

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Kilka przypadków *balanopostitis* u samców żubra w Hiszpanii

Streszczenie: Do tej pory opisano jeden niepotwierdzony oraz sześć potwierdzonych przypadków *balanopostitis* u samców żubra. Cztery przypadki były zdiagnozowane na podstawie objawów i potwierdzone podczas sekcji, podczas gdy dwa pozostałe dotyczą wciąż żyjących samców. Samiec zaliczony jako niepotwierdzony przypadek również żyje. Cztery samce należały do linii nizinnej a dwa do linii białowiesko-kaukaskiej. Wszystkie przypadki dotyczyły samców przywiezionych z zagranicy, a jak do tej pory żaden samiec urodzony w Hiszpanii nie wykazuje objawów.
