Case Report
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Diagnosis and management of a colombian stallion with urospermia: case report

Summary

Urospermia defined as the presence of urine in the ejaculate modifies the seminal environment and generates abnormalities in sperm motility, morphology and mortality as well as alterations in pH, BUN and creatinine of the ejaculate causing fertility problems for stallions. This pathology is caused by many factors that may involve nerve alterations, inflammatory conditions or intoxications and its treatment is based on the evolution of each patient with pharmacological and management alternatives. The objective of this report is to document the reproductive clinical findings, to discuss the treatment established and the possible causes in a case of urospermia of a Colombian stallion of 7 years whose motive of consultation was a yellow coloration in the ejaculate.

Keywords: urospermia, stallion, ejaculation, urine

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Abbreviations: ºC, degrees celsius; TLLC, capillary filling time; mg, milligrams; kg, kilograms; spz, spermatozoa; ml, milliliters; dl, deciliters; BUN, blood urea nitrogen; UI, international units; DT, total dose

Introduction

Urospermia defined as the presence of urine in the ejaculate can affect the reproductive clinical conditions of the animals leading to sub fertility or infertility in stallions.[1,2] Due to the uncommon nature of the disease, the prevalence and economic impact on the equine production is unknown, some authors have reported that of the stallions that present ejaculatory problems the 36% are associated with Urospermia.[3] Usually the animals that suffer from this pathology are clinically healthy, and the only abnormal finding evident is the yellow color of the ejaculate and its characteristic smell of urine.

The urospermia presentation is mediated by mechanisms that may involve nerve alterations in the alpha adrenergic receptors of the urinary bladder neck, urinary bladder paralysis, uroliths, cystitis, inflammation of accessory sex glands, equine tail neuritis, HVE-1 (Herpes Virus Equine Type 1), poisoning with sorghum among others.[4,5] Urospermia is a multi causal disease and it is difficult to reach its etiological diagnosis. However, the recognition of the pathology is given by the clinical signs during the collection and subsequent macroscopic and microscopic analysis of the semen characteristics where the color can be identified yellowing of the ejaculate, alterations in pH, BUN, seminal Creatinine as well as abnormalities in motility, morphology and mortality of spermatozoa.

There have been no reported cases of urospermia in stallions in Colombia and few reports in the world, for this reason it is very important to make a medical description when these cases occur as it will help the knowledge of the disease and provide treatment opportunities when they arise. These cases the objective of this paper is to document the reproductive clinical findings, discuss the treatment and the possible causes in a case of urospermia in a Colombian stallion of 7 years, and also make known to veterinarians the need to include this pathology in the differentials of reproductive diseases presented in equines.

Case presentation

7-year-old stallion from Tocancipá (Cundinamarca), fed with Kikuyo grass (Pennisetum clandestinum), Angleton hay (Dichanthium aristatum), concentrate 5kg/day and water at libitum. The owner reported deworming with fenbendazole (7.5mg/kg), historical vaccinations against venezuelan equine encephalitis, equine influenza and tetanus; as a reason for consultation in a seminal collection 3 days ago yellowing coloration was observed in the ejaculate.

Figure 1 as a reproductive history the patient has served mares previously with reported pregnancies and offspring. One year ago a seminal collection was made using as phantom a mare in heat obtaining seminal results within the normal parameters, since then it had not been collected.

Figure 1 Macroscopic seminal characteristics, yellow color of the ejaculate.

At the clinical and reproductive examination the anatomical and physiological constants were within the normal reference values except the body condition that was considered low 2/5 (Table 1). Diagnostic plans included complete reproductive evaluation (BSE), pre-seminal fluid cytology, pH, BUN and Creatinine of the ejaculate. The abnormal findings included alterations compatible with contamination of the ejaculate with urine (urospermia), mainly the values of BUN, Creatinine and Ph. (Table 2)

A dose of furosemide (2,5mg/kg) was administered and the patient was transferred to the crib where fecal material from another stall was arranged to stimulate urination[5] once the patient urinated and the empty urinary bladder was confirmed by rectal palpation a collection was carried out with artificial vagina using as phantom a mare in heat. The results were not significantly different to the first collection with persistent urospermia.

In a second visit performed 7 days later a standing collection was performed with artificial vagina fractionating the ejaculate. At the time of seminal collection the horse was not allowed to terminate the pelvic movements and the artificial vagina was abruptly withdrawn observing the exit of the penis erect with dilated glans. In this way, it was possible to separate the seminal fluids from the urinals by having a urine-free ejaculate and with seminal parameters within normal ranges. (Figure 2 & Table 3).

Table 1 Clinical examination Physiological constants

Parameter	Result	Reference value
Attitude	Alert	
Temperament	Docile	
Body Condition	5-Feb	0-5
Temperature	38°C	37.5-38.5°C
Heart Rate	36 Bets/min	28-40 lat/min
Respiratory Rate	12 Breaths/min	10 - 20resp/min
TLLC	2"	2"-3"

Figure 2 Collection and macroscopic seminal characteristics.

Table 2 Evaluation of behaviour and seminal characteristics first seminal evaluation

Skill and behaviour in mountain		
Parameter	**Result**	
Temperament	High libido - Anxious	
Libid	5 of 5	
erection	Normal	
mounts	Normal	
Penetration	Normal	
Ejaculation	Excessive pulsation of the urethra in the last moments of the ejaculate	
Seminal evaluation 1		**Reference value**
Collection Time	30-60 seconds	30-60 seconds
Collection Method	Artificial vagina (mare in heat)	
Number of Months	1	1
Volume (ml)	50ml	20-120ml
Appearance	Yellow	cream
Progressive Individual Motility	10%	Ø 40
Concentration	300*10⁶spz/ml	100-500*10⁶ spz/ml
Comments	Strong urine odor	
Seminal morphology		
Parameter	**Result**	**Reference value**
Normal	46%	> 70%
Loose head	29%	< 30%
Coiledtail	20%	
Medium piece defect	4%	
Head defect	1%	
Preseminal liquid cytology		
Parameter	**Result**	**Reference value**
Color	Translucent	Translucent
appearance	Slightlyturbid	
Nuclear Cells	Doesnotapply	
Proteins	Doesnotapply	
Ph, Bun Y creatinina		
Parameter	**Result**	**Reference value**
BUN	20	< 20mg/dl
Creatinina	1.7	< 1mg/dl
Ph	8,2	7,2 -7,5

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Table 3 Seminal characteristics of fractional collection

Seminal evaluation 2	
Collection Method	No phantom
Collection Time	30 seconds
Number of Months	1
Volume (ml)	50 ml
Appearance	cream
Progressive Individual Motility	70% / 100%
Concentration	350*10^{6}spz/ml
Normal Spermatozoa	93%

Discussion

Urospermia is a pathology of rare occurrence in horses of our environment, the present case becomes the first report in Colombia of a clinically healthy patient where the only abnormal finding evident was the yellow color of the ejaculate and its smell of urine besides the laboratory results with the high levels of BUN and seminal Creatinine that helped to diagnose the pathology. Being a multicausal disease is difficult to determine the exact etiology that caused this alteration, however, within the causes of urospermia in this case we assume an alteration of the adrenergic receptors which leads to a bad closure of the urethral sphincter can be caused by his unusual behavior at the time of collection in which it showed high libido and anxiety[6]. Authors have reported that the sphincter of the bladder during seminal emission is controlled by alpha adrenergic receptors. Other conditions that cause incontinence during ejaculation may be due to tumors, infections and diseases of the spinal cord.[6]

The medical and pharmacological decisions were based on the evolution of the patient, prioritizing the behavioral part and advancing until finding the solution to the problem, was administered furosemide and was taken to another manger with the purpose of emptying the bladder stimulating the urination and performing the seminal collection immediately afterwards to obtain ejaculate free of urine, a result that was not observed in the patient. Furosemide stimulates diuresis by inhibiting the reabsorption of electrolytes in the loop of Henle and distal tubules of the renal nephron, favoring the excretion of water, sodium and potassium.[6] Some authors report the use of imipramine at doses of 1.76 mg / kg two hours prior to collection since it improves the contractility of the bladder neck during emission and as such has been useful in treatment by promoting α-adrenergic activity.[7] The use of imipramine as pharmacological therapy was considered in the patient but with the problem oriented there was no need to use it when obtaining satisfactory results with the fractional collection. Another alternative was the chemical ejaculation described as obtaining the ejaculate in the patient through the administration of drugs such as xylazine at doses of 0.66mg/kg and oxytocin 20UI DT although their results may be questionable.[8,9]

In cases of urospermia methods of separation of the seminal parts are implemented as fractional collection, avoiding in some cases the problem of contamination of the ejaculate with the urine.[10] A fractional collection was performed with the horse standing for the high libido and anxiety manifested with the historical collection when a mare was used as a phantom in heat and the increase of pulsations in the extra pelvic urethra at the time of the same, with the results obtained was evidenced in this way that first ejaculated and then urinated. When sperm motility was separated from the urinary tract, an immediate improvement in sperm motility and morphology was observed. It was determined that the main cause of seminal alterations was the presence of urine in the ejaculate.

The definitive treatment was behavioral, it could have been advanced with medication, but it was not followed until that point because the animal responded to the fractional collection. In case of not having obtained good results, the treatment would have been followed through the use of other drugs like the one of imipramine, xilacina and Oxytocin. Urospermia is reserved prognosis pathology and presents a high probability of recurrence. For this reason, it was recommended in the patient not to perform natural mounts, always to perform the seminal obtainment through a fractional collection and artificial insemination and a separate recommendation was the seminal freezing

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Conflict of interest

The author declares no conflict of interest.

Patient consent form

Patient consent related case report take the permission from concerned patient.

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