Spontaneous Erection and Masturbation in Mithun (*Bos frontalis*) Bulls

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Abstract

In domestic species, spontaneous erection and penile movements or manipulation occur in an awake state, the behaviour is commonly known as masturbation. Six mithun bulls were selected, of which, three from Mizoram and three from Manipur strain. These strains were observed over a period of 12 months. This behaviuor were observed from 1800 to 800 hrs and especially in winter and spring season. The parameters studied were duration of erection, frequency of movements of penis, time of sexual erection and masturbation. Seminal parameters such as volume, mass activity, progressive motility, live sperm, concentration, abnormality, acrosomal integrity and HOST were studied, which were collected by massage method. Other parameters such as success rate, protrusion time, length of penis and ejaculation time were also studied. The seminal parameters were showed that there was no significant difference between the affected and unaffected animal. But the unaffected animals were non-significantly higher in seminal parameter than affected animals.

1. Introduction

Periodic spontaneous (non-sexual) erection and penile movements or manipulation have been described in a wide range of domestic mammalian species, including bulls, stallions, rams (Jainudeen and Hafez, 1987), cats (Aronson, 1949; Hafez, 1962), dogs (Hafez, 1962), boars, bucks (Roberts, 1972), red deer, primates (Beach, 1976) and rats (Schmidt et al., 1994). In domestic species, in which spontaneous erection and penile movements or manipulation occur in an awake state, the behaviour is commonly known as masturbation.

Spontaneous erection involves extension of the penis from the prepuce with engorgement to its full length and rigidity, in a nonsexual context. Masturbation involves rhythmic bouncing, pressing or sliding of the erect penis against the abdomen achieved by rhythmic contraction of the ischiocavernosus muscles and/or pelvic thrusting. The significance and regulation of these behaviours are not well understood. Spontaneous erection and masturbation in bovines have been viewed traditionally as aberrant behaviours resulting from regimentation or restricted activity of domestic existence or, alternatively, a venting of sexual frustration, either from inherent hyper sexuality or from thwarted access to heterosexual activity. Often it is assumed that masturbation limits the potential fertility of a bovine by depleting *sperm* reserves and sexual energy. There was no study regarding the incidence of spontaneous erection and masturbation in mithun. Therefore the present study reports the spontaneous erection and masturbation and the number of different management and breeding environments.

2. Materials and Methods

The study was carried out in the herd of mithun maintained at Jharnapani farm, NRC on Mithun, Nagaland. The mithuns were maintained under semi intensive management. In total, 6 mithun bulls were studied. Out of these, three from Mizoram and three from Manipur strain. These strains were selected due to over a period of 12 months, the spontaneous erection and masturbation were observed in these strains. The experimental animals were fed daily with *ad libitum* quantity of locally available forages and 5 kg of concentrate fortified with salt and mineral mixture. Fresh tap water was available throughout the day. All experimental protocols complied with regulations of the Institutional Animal Care and Use Committee (IACUC). This behaviuor were observed from

1800 to 800 hrs and especially in winter and spring season. The parameters studied were duration of erection (seconds), frequency of movements of penis, time of sexual erection and masturbation. Seminal parameters such as volume (ml), mass activity (1+to 5+), progressive motility (%), live sperm (%), concentration (x10^6 ml^{-1}), abnormality (%), acrosomal integrity (%) and HOST (%) were studied, which were collected by massage method. Other parameters such as success rate (%), protrusion time (sec), length of penis (inch) and ejaculation time (sec) were also studied. These parameters were measured by standard methods.

3. Results and Discussion

Based on the observation the data were presented in the Tables 1&2. There was no report regarding the sexual behaviour, spontaneous erection and masturbation in our knowledge. The spontaneous erection and masturbation in mithun was observed over a period of 12 months. This behaviour was very common in winter and spring season and it was observed from 1800 hours to 800hours, but it was more in the early morning hours (500-800 hours). This behaviour was very prominent in some strains of mithun especially in Manipur and Mizoram and was common in early stage of maturity (3-6 years). The time for erection of penis varies from 1 to 4 minutes and frequency of penile movement slightly higher in Manipur (13.67±5.3) than in Mizoram strains (12.23±4.8). The mithuns were allowed to mount in teaser animal, but there was no successful. So that the semen was collected by massage method and the seminal parameters were analysed. The seminal parameters were showed that there was no significant difference between the affected and unaffected animal. But the unaffected animals were non- significantly higher in seminal parameter than affected animals (Table 2). There were no comparable reports about these behaviours in mithun. The reason may be due to that erection often occurs within minutes of returning to the calm state following a startle or disturbance, or similarly within minutes of an increased arousal from sleep or transition from the drowsy to alert state (Sachs, 2000).

The mechanism by which aversive conditioning of spontaneous erection and masturbation adversely affects sexual response is perhaps less puzzling. Simple association of a negative stimulus with the sensation of commencing erection might subdue sexual arousal, erection and overall sexual performance. Also, the aversive conditioning experiences may render the animal more wary in general of his environment and handlers, effectively delaying and subduing sexual response. Simply evaluating sexual response before and after similar aversive stimulation that is not contingent on spontaneous erection might clarify this possible explanation.

Table 1: Masturbation behaviours in mithun bulls

Parameters	Manipur strain	Mizoram strain
Erection Duration (seconds)	180±45 (1-4 min)	176±38 (1-4 min)
Movements of the penis	13.67±5.3	12.23±4.8

Table 2: Seminal parameters of masturbation behaviour affected and unaffected mithun bulls collected through rectal massage method

Seminal Parameters	Affected Animals (40)	Unaffected Animals (40)
Success rate (%)	66.66±8.93	83.33±10.62
Protrusion time (sec)	98.40±10.61	81.70±5.92
Length of penis (inch)	10.60±0.24	10.56±0.18
Ejaculation time (sec)	205.00±16.59	190.60±17.55
Volume (ml)	0.97±0.13	1.19±0.15
Mass activity (1+to 5+)	2.60±0.26	2.90±0.17
Progressive motility (%)	66.70±4.84	72.30±3.06
Live sperm (%)	71.60±4.93	73.30±3.15
Concentration ($\times10^6$ ml^{-1})	489.70±37.99	522.30±20.07
Total sperm abnormality (%)	11.30± 0.84	10.20±0.66
Acrosomal integrity (%)	72.40±4.51	75.90±2.05
HOST (%)	69.20±4.85	74.40±3.59

Figures in parenthesis indicate number of ejaculates

The practical significance of the present research is that attempts to stop the spontaneous erection and masturbation in mithun is not likely to be effective and is likely to adversely affect sexual arousal, breeding behaviour and semen. For performance mithun with no future in breeding, reduced sexual arousal and erection may actually be a desirable result of punishing spontaneous erection and masturbation. In clinical cases, it can be controlled by anti-masturbatory devices and anxiolytic drugs (at doses similar to those which have proven useful for reversal of directly aversively suppressed sexual behaviour) as an aid to overcoming suppressed sexual behaviour (McDonnell et al., 1987). In addition to employing anti-masturbatory devices, handlers and trainers typically have verbally and physically reprimanded the mithun for sexual arousal or spontaneous erection and masturbation. Particular handlers and sometimes people in general appear to have become conditioned negative stimuli for erection or sexual arousal. Apparently, no critical data are available on effects of aversive conditioning of non-sexual erections in other animal species or in humans. Development of abnormal behaviour suggesting anxiety or anticipation of pain related to dropping of the penis for urination or for spontaneous erection and masturbation in aversively conditioned mithun suggests that use of this device or of this type of aversive conditioning in mithun is likely inhumane.

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