

Early first white rhino calving and consequent foot problem

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Introduction

Donna is the second born calf of the adult female Bella at Ziwa Rhino Sanctuary, Nakitoma, Uganda. In June 2016, and for the previous 26 months from April 2014, Donna was found in close association with two older male sub-adults Obama and Augustu, the latter being the first calf of Bella, therefore her older brother.

At around 9am, Donna turned on Obama and was restless. From 3pm Donna came into labour with Obama and Augustu in close proximity.

It is generally reported that white rhinos reach sexual maturity at 4 to 5 years but do not reproduce until the age of 6 to 7 years old. (see websites for Save the Rhino International, International Rhino Foundation, Worldwide Fund for Nature, among others). It was, therefore, some surprise when the sub-adult female Donna gave birth at the age of 4 years, 5 months and 20 days, to a male calf, later to be named Ajabu.

Conception

Given a 16 month (487 days) gestation period, as had been recorded on three occasions at Ziwa, Donna would have conceived at 3 years, 1 month and 20 days old being on/around March 1st, 2015. Monitoring data shows no male attention shown to Donna in February or April but five interactions in March—4, 5, 12, 28, 29. On each occasion, Donna went out of view for several hours during which time mating could have occurred. Only on March 29 was mating recorded but it would be misleading to conclude that conception had not occurred at a previous occasion.

Conception at around 3 years, 1 month and 20 days is considered exceptionally early. The main danger at this age is considered to be physical with the heavy adult male potentially damaging the back and/or hind quarters of the small female on mounting. In the case of the Ziwa rhinos in general, including Donna, the climate and habitat

enables rapid and nutritious grass growth such that they reach a size and bulk well in excess of that normal for their age.

Age at First Calving

Schenkel and Schenkel-Hulliger (1969) concluded from observing behaviour between males and sub-adult females that, in black rhinos, sexual maturity was reached between 3.5 and 4.0 years old with a subsequent first calf between 4.75 and 5.25 years old. Göltenboth et al. (1995) state that, in captivity, African rhino females become sexual mature at about 4 to 6 years. However, females are observed to have been mounted as early as 3 years. In the wild females have reportedly given birth to their first calves at 6.5 to 7 years. Edwards et al. (2013) concurred with this stating that black rhino females in captivity can commence oestrous cyclicity between the age of three and four years, with a record of one female aged three years and eight months of age exhibiting clear oestrous cyclicity.

In 1999 at Lewa Wildlife Conservancy, Kenya a first calf was born to a white rhino female Jessima when only 5 years 3 months old.

Unpublished data from a high density (3.4/sq km) wild white rhino population gives a median age at first calving for 34 females of 5 years and 2 months with a range 4 years and 1 month to 6 years and 10 months. Allowing for a 16 month gestation period, the median age at conception would be 3 years and 10 months.

Of the 34 females, 20 (59%) were estimated to have conceived at 4 years of age or less and only 7 (21%) gave birth at 6 or more years of age.

The birth date given for the 34 rhinos and their calves was estimated from physical sightings (at which photographs were taken) within 3 months of birth with an error considered to be no more than ± 1 month.

Health of Calf–Ajabu foot problem

It took some two to three hours for Donna's calf Ajabu to stand and clearly Donna was concerned as she nipped him

on his side to encourage him to get up. Indeed, at one stage, Donna tried to get his ears in her mouth to lift him.

Once the calf stood up and started to walk, it became clear that there was a problem with its right hind leg. The foot was not able to lie flat on the ground and the sole pointed upwards from the heel.

Despite this, over the next few days, the calf was able to walk further but only ran for a short distance if he got a fright. Ajabu was a big calf, definitely no smaller than any of the other calves born on the sanctuary.

After six days, the footpad clearly showed the villous surface texture normal for new-born rhino and which only forms into normal foot skin with use which was not possible at that time. (Figure 1, 1-8; see colour plates: page vii).

Sixteen days after Ajabu's birth locomotion improved. Ajabu was able to make a foot print, with the sole of the foot pressing on the ground, although it was described as 'a bit spikey'. Experienced vets agreed the cause of the problem was a contracted tendon probably due to bad positioning of the calf in the uterus (the most common cause of the problem in horses with their long limbs and more frequent size mismatch between dam and foal is due to uterine malposition).

As the contracture was releasing spontaneously and as the calf was starting to take weight normally while still at such a young age, it was thought likely that the joints and overall conformation of the limb would become normal.

Ten weeks after the birth, the foot appeared to be completely normal.

Conclusion

The unpublished data and the experience from Ziwa suggests that white rhino female sexual maturity in the wild could be reached as early as 3 years of age with an age at first calving more likely to be 5 to 5.5 years than between 6 and 7 years as the literature generally suggests. Furthermore, it has been concluded that the most plausible cause of the calf's foot problem was due to the early pregnancy. The size of calf was large for the relatively young mother resulting in a tendon contracture of Ajabu's right hind foot. This is common in equine foals and is due to restricted

space in the uterus positioning, with a leg becoming twisted or "stuck" developing a shortened tendon.

References

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Figure 1. The development of the contracted tendon in the right rear leg of the white rhino calf Ajabu. Pictures 1-3 taken 4/9/16, pictures 4-5 taken 16/9/16.

