



# A Rare Case of Paraphimosis in an African Spurred (Sulcata) Tortoise (*Centrochelys sulcata*)

Ndumari Wachida<sup>1</sup> and Chris Ezihe<sup>2</sup>

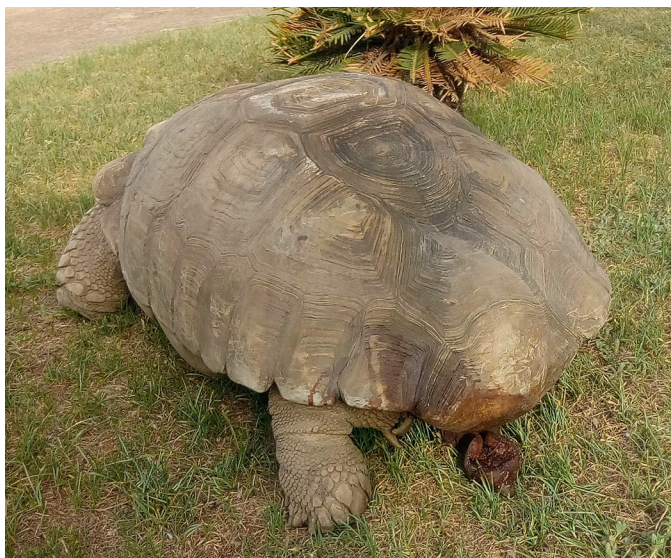
<sup>1</sup>Department of Theriogenology, College of Veterinary Medicine, Joseph Sarwuan Tarka University, P.M.B. 2373, Makurdi, Benue, Nigeria (ndumariwachida@gmail.com)

<sup>2</sup>Department of Physiology and Biochemistry College of Veterinary Medicine, Joseph Sarwuan Tarka University, P.M.B. 2373, Makurdi, Benue, Nigeria

Paraphimosis is the inability to completely retract the penis, usually after erection (Davidson 2010). Male turtles have a single penis (phallus) without a solid lumen. It consists of a double corpora cavernosa and a urethral groove, and this organ is not used for urination. Depending on the species, color may vary from pink to dark purple to black. Except for mating, trauma, or death, the penis is retracted on the ventral surface of the cloaca (Kirchgessner and Mitchell 2008; Ojeh and Adetunji 2008). Paraphimosis is rarely seen in turtles. Causes include infection, forced separation during copulation, inflammation, secondary hyperparathyroidism, and nutritional, neurologic, or traumatic defects involving the retractor penis muscles or cloacal sphincter, straining from intestinal parasites, and impaction of the cloaca with gastrointestinal foreign bodies (Norton 1994; Innis and Boyer 2002; Barten 2006; Martinez-Jimenez and Hernandez-

Divers 2007; Nisbet et al. 2011; Korkmaz et al. 2014). In this case report we evaluate the treatment outcomes of a rare occurrence of paraphimosis in an African Spurred Tortoise (*Centrochelys sulcata*).

In 24 March 2023, a client reported to the ambulatory unit of the Veterinary Teaching Hospital at Joseph Sarwuan Tarka University, Makurdi, Nigeria, saying that for the past three days she had noticed the protrusion of an organ dragging on the ground from the anal area of her male African Spurred Tortoise. Further history revealed that the tortoise was acquired for a school zoological garden and later brought home as a pet; it had been alone in the house without a female for the past 40 years with no history of ill health, medication, or any veterinary intervention (Fig. 1). The tortoise weighed 60 kg and had a rectal temperature of 29.4 °C; further clinical examination revealed a prolapse of the penis through the



**Figure 1.** An African Spurred Tortoise (*Centrochelys sulcata*) with a prolapsed penis. Photograph by Chris Ezihe.



**Figure 2.** Ventral (left) and dorsal views of the prolapsed penis of an African Spurred Tortoise (*Centrochelys sulcata*). Photographs by Chris Ezihe.

cloaca. The membrane covering the penis had started losing its moisture and viability, and had become necrotic at the base (Fig. 2). Without treatment, it likely would have been sloughed.

The penis was washed with 1% chlorhexidine and rinsed with normal saline; it was then covered with cotton wool soaked with normal saline for 30 min to moisten the organ. After 30 minutes, sugar granules were sprinkled on the penis and gentle digital pressure applied to reduce the edema, after which anesthesia was achieved locally by infiltrating 5 ml lignocaine around the cloaca. The prolapsed penis was gently returned to the cloaca using petroleum jelly mixed with procaine penicillin as a lubricant; a temporary purse string suture was applied using silk size zero on the cloaca and left in place for five days.

The tortoise was confined in a small space for the period of treatment, which included intramuscular injections of Piroxicam 0.5mg/kg for 3 days, dihydrostreptomycin sulphate (10 mg/kg for 7 days) and Procaine penicillin (8 mg/kg for 7 days through a Norbrook Pen & Strep). After seven days of medication, the suture was removed and the tortoise released into its habitat. A week later the tortoise was followed up to be sure there was no relapse.

Paraphimosis may occur in snakes and lizards but is rarely seen in chelonians (Barten 2006; Norton 1994). According to the client history in the present case, this condition did not happen as a result of mating. Previous reports emphasized that turtles experienced uncomplicated anesthesia with propofol/isoflurane, alfaxolon/isoflurane or tiletamine/zolazepam, and isoflurane combinations or medetomidine/ketamine combination (Korkmaz et al. 2014). In this case, local anesthesia was achieved by infiltrating 5 ml lignocaine around the cloaca. No complications were experienced during administration of anesthesia. Paraphimosis should be corrected as soon as possible to save the organ. A recurrent prolapse can be prevented by reducing the edema and fixing using tobacco-pouch or horizontal sutures after cleaning and lubrication. Previous studies have reported the use of cold application (Norton 1994; Barten 2006; Silva et al. 2013; Podhade and Harne 2014), hypertonic saline (Boyer 1998; Bennett and Mader 2005), and granulated sugar to decrease edema (Do u et al. 2015).

If the organ is necrotic, a prolapsed penis should be amputated by applying ligation at its base (Norton 1994;

Boyer 1998; Barten 2006; Ojeh and Adetunji 2008; Nisbet et al. 2011; Korkmaz et al. 2014). As the penile tissue in the present case was alive, the organ was gently returned into the cloaca. Previous studies of penile prolapse recommended the use of antibiotics for three weeks (Innis and Boyer 2002; Korkmaz et al. 2014). In conclusion, intervention was successful in correcting paraphimosis in this African Spurred Tortoise.

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