

# Male genital/cloacal prolapse in wild marsh crocodiles *Crocodylus palustris*, Gujarat, India

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## INTRODUCTION

The mugger crocodile (*Crocodylus palustris*) is quite common in many states of India (Choudhury & de Silva, 2013). A small, notable population of the species flourishes in the Charotar region of central Gujarat (Patel et al., 2014) and is well known for its calm behaviour and peaceful coexistence with human (Pooley et al., 2020). We have monitored this population for the last 10 years (Vyas, 2013; VNC, 2021) and have reported on aspects of behaviour, breeding, threats, and the impacts of human activities (Vasava et al., 2015; Vyas & Vasava, 2019; Vyas et al., 2020a & 2020b). Here, we report strange mortalities associated with male genital/cloacal prolapse.

In 2017, two muggers were observed at two different sites in waterbodies of Charotar, Gujarat. The first, on 1st October 2017, was of a juvenile (total body length 105 cm) found dead near the Mahi irrigation canal (22° 65'45" N; 072° 75'79" E) at Vaso, Kheda. The animal was lying on the canal road with no apparent injuries to the body apart from a dark red erect structure emerging from the vent on the right side the body (Fig. 1). The second, on 18th November 2017, was of an adult mugger (total body length 155 cm) found on the edge of Ram Sarovar (22° 39'3.30" N; 72° 45'7.49" E), near Vaso, Kheda. This animal was alive but inactive, and had no injury except a dark red bulge (10 cm) on left side of the vent (Fig. 2) a prolapsed cloaca. This animal was in a critical condition and died within 30-40 minutes before it could be transferred to the nearest rescues center for veterinary assistance.

In crocodiles, the retracted phallus is a distensible, grooved, unpaired organ located in the ventroposterior region of the cloaca, near the vent (Palmer et al., 1998). The phallus is primarily cartilaginous and has little erectile spongy tissue and becomes erect or retracts depending on vascular pressure (Kelly, 2013). Male genital prolapse (paraphimosis) is a common condition in reptiles (Bennett, 1996; Hernandez-Divers, 2004). In a literature survey, we were only able to find a single report of this condition in a crocodile. This was of a captive *Crocodylus niloticus* (Lankester & Hernandez, 2005) where it was suggested that the captive animal could be suffering from hypo-calcaemia owing to a diet of offal lacking sufficient calcium but no cause could be identified conclusively.

There are several possibilities for the cause of genital/



**Figure 1.** A juvenile mugger (*Crocodylus palustris*)- **A.** As found dead on a canal road at Vaso, Kheda, Gujarat, **B.** Ventral aspect of the dead mugger, **C.** With prolapsed phallus



**Figure 2.** A large adult mugger (*Crocodylus palustris*) **A.** On the edge of Ram Sarovar, Nr. Vaso, Kheda, Gujarat, **B.** Showing detail of the prolapsed phallus

cloacal prolapse, including trauma from bites by conspecifics, traction during copulation, infection, inflammation, neurologic deficits involving the retractor phallus muscles or cloacal sphincter, impaction of the cloaca with urates, and in captive crocodiles iatrogenic damage during probing.

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