Emergency procedures in the field: a report of wound treatment and fast healing in the giant ditch frog (Leptodactylus fallax)

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Abstract

A sub-adult, female, giant ditch frog (Leptodactylus fallax) (known locally as a mountain chicken) presented with a puncture of the coelomic cavity with partial intestinal evisceration. Improvised field treatment included replacement of the eviscerated intestines and closure of the wound using cotton-tipped applicator swabs. After seven days, the animal’s injury appeared to be healed. During the rapid progression of the healing process, the animal showed no adverse effects. This report demonstrates a novel and successful field technique for wound treatment of a serious penetrating injury in an amphibian. It also shows a practical, feasible, and beneficial procedure that improved this animal’s welfare and that might be appropriate under field conditions or if standard medical procedures cannot be followed.

Keywords: amphibian medicine, animal welfare, field surgery, Leptodactylus fallax, minor surgery, wound healing

Introduction

When working in the field, researchers are often confronted with situations where veterinary medical procedures are needed, either as part of the project in progress or even in unexpected circumstances. Field surgery is used when it is impractical to transport animals to a laboratory or hospital/rehabilitation centre (Philo et al. 1981) or when transport would cause more harm. Implantation of transmitters for radiotelemetry studies, and/or tags for identification, are among the most common in loco minor surgeries in amphibians (eg Sinsch 1988; Corn 1992; Wright 2001). Besides these, reports on amphibian medical procedures in the field are sparse. In addition, these kinds of actions in the field raise ethical issues. For instance, Kirkwood and Sainsbury (1996) suggested that the decision to intervene to treat (as opposed to euthanasing to prevent further suffering) cases of sick or injured free-living wild animals should not be based on welfare grounds alone but should also consider conservation relevance of a species or population and other factors also.

The giant ditch frog (Leptodactylus fallax), known locally as the mountain chicken, is one of the world’s largest frogs and currently listed as Critically Endangered (Fa et al. 2010). Adult individuals may reach more than 1 kg and a maximum snout to vent length (SVL) of 210 mm (Lescure 1979; Garcia et al. 2007). The species once inhabited at least five major islands in the Lesser Antilles, but occurs now only on two islands: Dominica and Montserrat (Lescure 1979; Schwartz & Henderson 1991; Daltry & Gray 1999; Hedges & Heinicke 2007). Over-hunting, together with habitat loss, and introduction of alien predators are major factors affecting both abundance and distribution (Hedges 1993; Kaiser 1994). However, a new emergent threat, the infectious disease caused by the chytrid fungus (Batrachochytrium dendrobatidis [Bd]), has been responsible for both pushing the Dominica population to extinction (no positive sightings have taken place in the last few years), and more recently, causing sharp die-offs in Montserrat (García et al. 2007; Young 2008; Fa et al. 2010; GM Rosa and A Fernández-Loras, personal observation 2007).

In this short communication we report a minor surgery improvised in the field in a giant ditch frog. We also follow and discuss the healing process under natural conditions.

Description

This work was carried out during ongoing research on the Bd outbreak that is threatening the giant ditch frog on Montserrat by Durrell Wildlife Conservation Trust, the Zoological Society of London and Parken Zoo, in collaboration with Montserrat’s Forestry Department (Stevens & Waldmann 2001). A sub-adult female L. fallax was found within the transect along the Fairy Walk ghaut, an area in the Centre Hills used for regular monitoring of long-term