Dermatitis prompted by a collar employed in radio-telemetry monitoring

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Abstract

Technological advances, such as radio-telemetry, have been increasingly employed for animal monitoring because they can furnish important information regarding the ecology and behaviour of various species. However, during a study on semi-domiciled domestic cats (Felis silvestris catus) conducted in an environmental protection area in Ilha Comprida, state of São Paulo, Brazil, we identified a case of dermatitis that was caused by a radio-collar, which was first noticed by the pet owner. This provided the opportunity for close observation not normally possible when these are used to track animals in the wild. It is our aim to bring the possibility that skin inflammation may develop when using radio-collars in radio-telemetry monitoring to the attention of other researchers. This finding highlights the need for greater attention to be paid to the use of this methodology, especially in the realm of wild animals.

Keywords: animal welfare, Atlantic Forest, dermatitis, Felis silvestris catus, radio-collar, telemetry

Dermatitis prompted by radio-collar

Radio-telemetry can provide relevant information regarding the behaviour of twilight or nocturnal mammalian carnivores. This technique is advantageous because it does not rely on direct visibility of the observed animal (Liberg & Sandell 1988). As a result, there have been great advances in the field of radio-telemetry, with it being increasingly utilised for the observation of animal behaviour. It has been successfully employed in the monitoring of a wide variety of species and habitats, and is sometimes the only way of obtaining data on certain species (Crawshaw 1997).

The domestic cat (Felis silvestris catus) has accompanied human beings throughout all the exploration and colonisation phases of humankind; thus, they have been introduced into most terrestrial ecosystems either unintentionally or deliberately (Fitzgerald & Karl 1979). These animals have adapted successfully to various environments (Apps 1983), becoming dominant predators, particularly in insular locations (Nogales et al 1992; Nogales & Medina 1996; Barratt 1997; Bonnau et al 2007; Medina & García 2007) as well as in rural and urban areas (Pearre & Maass 1998; Weber & Dailly 1998; Woods et al 2003). Unfortunately, cats can act as potential transmitters of zoonoses to native species (Ogan & Jurek 1997), mainly to other felines (Jessup et al 1993; Roelke et al 1993; Lucherini et al 2008). Moreover, domestic cats can directly or indirectly influence the population growth of wild feline species which, in some cases, can endanger their conservation status (Biró et al 2004) as well as that of their prey.

There is a lack of information regarding the behaviour of animals inhabiting natural habitats in Brazil and their subsequent impact on fauna. Thus, we conducted a study between September 2009 and September 2010 that aimed to gain an understanding of diet and area usage (living area) of a group of ten semi-domiciled cats (ie cats that live mostly outdoors but which rely upon humans for food and shelter) belonging to residents of Ilha Comprida, State of São Paulo, Brazil (24°52’S, 47°57’W) (cf Ferreira 2011).

This work was approved by the Animal Research Ethics Committee of the Federal University of Juiz de Fora, Minas Gerais, Brazil (protocol n 024/2009, CEEA). Consent was also obtained from the pet owners.

Firstly, each animal was identified. Then, each cat received a radio-collar. The collar consisted of a piece of cloth impregnated with neoprene (a synthetic polychloroprene elastomer) and a flexible aerial. The tracking device was connected electronically and a feeding battery was coated with an impermeable resin. The collar was fastened onto the animal’s neck with stainless screws and nuts through two brass (copper/zinc alloy) end-plates (see Figure 1).

Sixteen days following collar fixation, one of the animals presented with fur loss, reddening, and lesions caused by an itch-induced eruption of blisters in the cervical region.