VETERINARIA

A CASE OF CALCINOSIS CUTIS AND PSEUDOCUTANEOUS HORN IN A CAPTIVE RED-EARED SLIDER *(Trachemys scripta elegans)*

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Resumen: Se describe un caso de calcinosis cutis acompañada de una proliferación cornea con protusión hacia el exterior, formando un pseudocuerno cutáneo, en el cuello de una tortuga de Florida (*Trachemys scripta elegans*). Esta patología dermatológica adquirida, descrita aquí por primera vez en una tortuga, consiste en una excrecencia epidérmica formada básicamente de queratina y estructurada sobre un núcleo compacto y osificado en una disposición intradérmica. Se sugiere que esta lesión se desarrolla como consecuencia de una reacción proliferativa cutánea ante la presencia de una calcinosis cutis, lesión asociada a una calcificación ectópica en reptiles aparentemente sanos. Debido a que estas lesiones son asintomáticas y se presentan en reptiles sanos, se aconseja la realización de un detallado examen externo, la realización de biopsias, la remisión a servicios de histología de las estructuras sospechosas y la inclusión de esta lesión en todos los diagnósticos diferenciales dermatológicos.

Key words: calcinosis cutis, pseudocutaneous horn, *Trachemys scripta elegans*, Chelonia, dermatology.

INTRODUCTION

Calcinosis cutis and (true) cutaneous horns are dermatologic processes described in numerous vertebrate species. However, these lesions are only rarely reported in rep-tiles (FRYE, 1991; FRYE & WILLIAMS, 1996). The likely reasons for the apparent rarity of these cutaneous excrescences include minimal clinical signs, relative small size of the lesions, an absence of owners' interest to evaluate them – or a reluctance to spend money to have them examined professionally; each of these are probably reflected by the paucity of documented cases. This report describes a case of calcinosis cutis and pseudocutaneous horn in a turtle (*Trachemys scripta elegans*), the procedure for its excisional biopsy, and the histologic description of the lesion. This is the first description of the histological characteristics of a pseudocutaneous horn in a reptile, and the gross appearance of the lesion is similar to true cutaneous horns in

Figure 1. Preoperative photograph of pseudocutaneous horn arising from the ventral cervical integument of a red-eared slider turtle.

other animals and humans described (LEVER & LEVER, 1983). The histological characteristicshowever, differ because of the presence of dense intradermal bone, bone marrow, and the lack of hyperkeratosis in the horny mantle that invests the exposed portion of the bony excresence .

CASE REPORT

In August 2000, a 4 year-old female red-eared slider (*Trachemys scripta elegans*) was donated to the Catalonian Reptile and Amphibian Rehabilitation Center (C.R.A.R.C.) because the owner lacked a proper terrarium in which to house it. Upon examination, the turtle did not display clinical signs of disease. A review of the husbandry conditions were considered to be satisfactory for this species. A detailed external examination disclosed a cornified structure arising from the ventral cervical skin. Palpation revealed the anomalous structure to be penetrating to the depth of the subcutaneous and dermal tissues (Figure 1).

The turtle was anesthetized with tiletamine - zolazepam (Zoletil 20®, Virbac, Barcelona, España) at a dosage of 15 mg/kg IV, injected into the dorsal coccygeal vein. This induced a state of deep anesthesia that was achieved in 10 minutes. The surgical procedure was completed in 35 minutes. The turtle awoke after 50 minutes after conclusion of the surgery. An excisional biopsy was performed employing a longitudinal skin incision that surrounded the cornified structure. Blunt dissection to a depth of 0.5 cm was employed to completely excise the subcutaneous tissue surrounding a carti-laginous attachment to the horn-like structure. The lesion was a circumscribed, conical object that protruded from the surrounding integument and measured 2.0 x 9.5 mm. The skin was sutured in a slightly everting pattern with polyglycolic acid material (Vycril®, Ethicon, Edinburgh, Scotland, Reino Unido).

Postsurgical treatment comprised daily disinfection of the incisional line with dilute iodine solution and intramuscular injections of enrofloxacin (Baytril® 2.5%, Bayer, Barcelona, España) at 5 mg/kg q 24h for 10 days. The sutures were removed one month postoperatively. Four months after excisional biopsy, the turtle remains normal and exhibits no evidence of regrowth of the cutaneous horn. The excisional biopsy specimen was fixed in 10% neutral buffered formalin, processed by routine histological methods, and stained with hematoxylin and eosin.

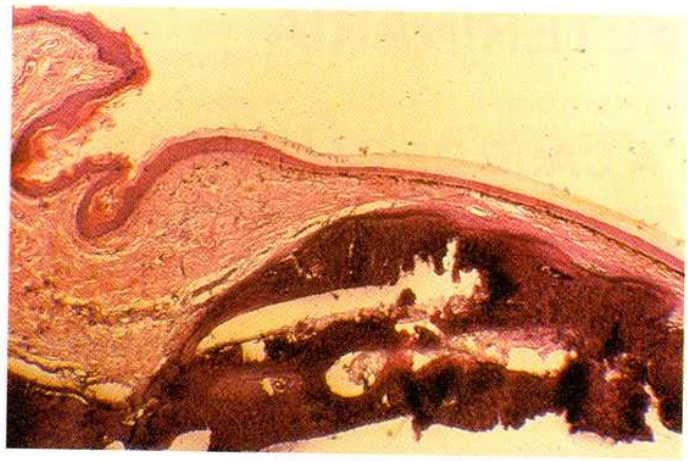

Figure 2. Photomicrograph of the lesion. Note the variably thick cornified layer overlying a core composed of compact and cancellous bone with scanty bone marrow filling the cancellous spaces comprising a discrete focus of calcinosis cutis.H & E X 27 original magnification.

HISTOLOGICAL EXAMINATION

The lesion consisted of a raised mass composed of a compact bony cortex core with scanty bone marrow filling the cancellous spaces (Figura 2). This bony core was covered on its exterior surface by a mantle of cornified squamous epithelium that varied in thickness from only a few cell layers at its base to a substantially thicker and smooth horny layer at its outermost apex. A few scattered dendritic melanin-containing chromatophores were identified within the superficial layers of the dermis immediately beneath the outermost apex.

DISCUSSION

Calcinosis cutis is a pathological process characterized by the deposition of calcium-rich mineralized plaques within the dermis and can be related to acute or chronic trauma or

nutritional disorders (FRYE, 1991). True cutaneous horns are relatively common integumentary lesions in humans and have also been described in domestic animals, especially canines. The second author has diagnosed true cutaneous horns in two dogs, one cat and two tortoises *Terrapene carolina* and *Gopherus agassizii* (the last published in FRYE, 1991) We are aware of two additional: one in a monitor lizard, *Varanus exanthematicus* (BARTEN, unpublished data) and a wild green iguana, *Iguana iguana*, (FRYE, unpublished data). Although true primary cutaneous horns are benign lesions, they have a potential for malignant transformation into keratoacanthoma and squamous cell carcinoma (BART *et al.*, 1968), basal cell carcinoma (SANDBANK, 1971), and more rarely, tricholemmoma (BROWNSTEIN & SHAPIRO, 1979; LEVER & LEVER, 1983). The etiology of true cutaneous horns in reptiles is unclear, but in humans, chronic overexsposure to solar irradiation, chronic abrasion, and/or other chronic trauma have been associated with the induction of these hyperkeratotic epidermal excrecenses (ROBBINS & COTRAN, 1979). In this instance, the development of a pseudocutaneous horn is unknown but we suspect that it was secondary, and in reaction to, the presence of a discrete focus of chronic calcinosis cutis comprising a core of dense compact and cancellous bone containing bone marrow. The precise differentiation between pseudocutaneous horns and true cutaneous horns depends upon the characterization of histological features of both, especially the presence or absence of significant hyperkeratosis which is a hall-mark of true cutaneous horns and is lacking in pseudocutaneous horns.

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