XANTHOMATOSIS IN GECKOS: FIVE CASES

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Abstract. Xanthomas are nodular tissue accumulations of lipid-laden macrophages and cholesterol clefts. Xanthomatosis has been reported in humans, birds, frogs, cats and dogs, where it is often associated with hypercholesterolemia and hyperlipidemia. This report describes xanthomatosis in one Northern green gecko (Naultinus grayi) and four leaf tailed geckos (two Uroplatus henkeli, one U. sikorae, one U. fimbriatus). All geckos were females and ages ranged from 3-11 yr. The geckos were inconsistently exposed to two separate forms of ultraviolet light (Reptisun Bulb, Zoo Med Laboratories, San Luis Obisbo, CA 93401, USA), and Vitalite Dura-Test Corporation, Fairfield, NJ, 07004, USA). The diet of each gecko consisted of waxworms, meal worms and crickets. Two geckos had signs of central nervous system disease that included star gazing, torticollis, dorsal recumbency and seizures. One of these geckos was euthanized and one died spontaneously. One gecko had a long history of weight loss and intestinal parasitism, and then died spontaneously. One gecko had chronic inflammation of a spectacle and died following enucleation. One gecko died spontaneously and unexpectedly, with no previous medical history. Serum chemistries were obtained on one gecko, and all values were normal with the exception of severe hypercholesterolemia (1,300 mg/dl). Necropsy findings included emaciation in three geckos, and white nodular foci on coelomic surfaces of two geckos. Two geckos had no gross abnormalities. Histopathology revealed xanthomatosis involving the coelomic surfaces of four geckos and ventricles of the brain in all geckos. Xanthomas in the brain were associated with varying degrees of hydrocephalus. The lesions were comprised of stacks of clear clefts consistent with cholesterol crystals, these structures surrounded by epithelioid macrophages, multinucleated giant cells and lymphocytes. Four geckos had active folliculogenesis, and two had foci of follicular degeneration and localized yolk coelomitis. In all cases, xanthomatosis was considered a significant factor in the animal's demise or morbid condition. Although serum chemistry values were only available from one gecko, values in that case suggest that hypercholesterolemia may have been a significant factor in development of xanthomatosis in these geckos. Although diet may have contributed to the hypercholesterolemia in one gecko and xanthomatosis in all geckos, a dietary correlation with xanthomatosis could not be established because the affected geckos were fed a variety of meal worms, wax worms and crickets. Because the condition was only seen in female geckos, it is possible that dietary factors, folliculogenesis, follicular degeneration, and yolk coelomitis may alter cholesterol metabolism and predispose to xanthomatosis in geckos.

Key words: xanthomatosis, xanthoma, gecko, hypercholesterolemia, yolk coelomitis