EARLY NEUTERING OF
MALE GREEN IGUANAS, Iguana iguana—AN EXPERIMENT

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Abstract: A group of freshly imported male baby green iguanas was set up in an indoor environment. Half of these were surgically neutered, and half remained intact. They were reared for the first 3yr of their lives and their behaviors monitored. Most of the males that were neutered failed to develop any of the aggressive behaviors observed in the intact males.

Key words: green iguana, Iguana iguana, behavior, neutering.

INTRODUCTION

Aggressive behavior in adult male green iguanas, Iguana iguana, have been noted by many iguana owners and is a frequent reason for them to be presented to a veterinarians. Some, but not all, male iguanas become increasingly aggressive as they mature and enter sexual maturity. Among these individuals, some show lessened or absent aggression during the nonbreeding season, while others may remain relatively or highly aggressive throughout the year. These aggressive behaviors may be expressed to other iguanas and also to their human caregivers.

Among the treatments utilized to help reduce or control this male aggression, a number of veterinarians, including this author, have surgically neutered adult males. In monitoring such males that have been neutered, and in conferring with other veterinarians who have performed such procedures, it has been apparent that neutering does not always reduce the male aggression much if at all. Perhaps after the behavior has developed, neutering is not palliative.

An experiment was therefore devised in an attempt to determine whether early neutering, before the onset of sexual maturity, would help prevent the development of aggressive behavior in male iguanas.

MATERIALS AND METHODS

A group of 12 juvenile, freshly imported green iguanas was utilized for this study. All were clinically normal, without external parasites, abscesses, or missing toes. Sex was determined by probing or by hemipenial eversion.

The iguanas were housed at a pet shop/reptile store in Tampa Florida, with the understanding that all would be reared together under identical conditions and not sold until the completion of the study. They initially measured 98.0-105.0mm snout-vent length (SVL). All were given oral fenbendazole at 50.0rnglkg daily for 5d, and this was repeated twice at 3wk intervals. They were housed in a display enclosure measuring 8x3x4, with sliding glass front doors and aluminum screening at the tops of the ends for ventilation. The substrate was a mixture of sand and gravel, spot-cleaned regularly, and completely cleaned about every other week. Lighting consisted of a double row of two, (48in) ReptiSun fluorescent bulbs as a UVB source, replaced every 10mo, plus two 150W incandescent spot lights at one end of the enclosure to create a hot spot. The...
diet consisted mainly of chopped fresh produce, with occasional supplements of commercial iguana diets, and calcium powder or a vitamin-mineral powder (various brands) sprinkled over the food 2-4 times weekly at irregular, unrecorded intervals.

After the iguanas were acclimated for 2mo, all were taken to surgery. Six males were surgically neutered (the testes were removed) and 6, the controls, were not. Each iguana was anesthetized with isoflurane in oxygen. A right paramedian ventral incision was made through the skin and abdominal wall. A single Weck Hemoclip (R) was utilized to ligate the testicular vessels prior to removing the testis. The six controls were not neutered although the abdominal cavity was opened; this allowed verification of their sexual identity, and made all of the animals appear identical postoperatively. An AVID microchip was implanted into the body cavity of each individual so that each could be positively identified throughout the experiment. The skin was closed with a 4-0 nonabsorbable monofilament suture (Fluorofil) in a simple horizontal mattress pattern. Perioperative antibiotics were given (cephalexin, 40.0mg/kg PO q12hr for 3d). Skin sutures were removed at 45d. No one other than the author knew the identities of the neutered versus the sham-operated control animals.

The 12 iguanas were maintained together in the pet store with constant handling and human exposure. The author checked the iguanas periodically at irregular intervals to monitor their health and behavior. One unneutered male developed a digital abscess 14mo postoperatively that responded to curettage and antibiotic therapy.

Aggressive behaviors were defined as those behaviors exhibited toward either other iguanas or humans including biting, mouth gaping, lateral posturing and lateral compression of the body, head lowering and dorsal body arching, dewlap expansion, exaggerated head bobbing, and (rarely) tail slapping (Carpenter, 1982).

RESULTS

All 12 of the iguanas adapted to captivity and did very well during their first year. Two were a bit more “skittish” than the others (1 neutered, 1 control), but none were aggressive and none tried to bite their handlers after the first 2mo.

At about 16mo, 2 of the iguanas were beginning to act aggressively toward their cagemates, and becoming a bit more difficult to handle than the others. Both of these were unneutered controls. The iguanas at this time measured 250-310mm SVL, with the aggressive ones being among the largest.

By 24mo at snout-vent lengths of 350-415mm, 4 of the iguanas were exhibiting aggressive tendencies toward their cagemates and their handlers, especially as winter progressed. These 4 were all intact controls. The remaining 2 control animals, and all 6 of the neutered iguanas, continued to remain relatively calm and easily handled.

As summer approached, from April onward (about 30mo), the aggressive behaviors lessened in 2 of the 4 intact iguanas, which had been more aggressive, although they could still be characterized as being somewhat more difficult to handle than the neutered males.

The experiment was to continue for the next year, but the store was suddenly sold and the iguanas dispersed before the author was notified.
DISCUSSION

The aggressive behaviors of the green iguanas in this experiment were evaluated only subjectively; no detailed objective data were collected and quantified. It is noteworthy that the only males to develop aggressive behaviors were intact controls (66%) and that none of the neutered iguanas became aggressive.

Among adult male aggressive green iguanas that this author has neutered, the results have been unreliable and disappointing. Only a small percentage of those aggressive adult males presented for neutering to help reduce their aggression were deemed by their owners to have lessened to an acceptable level postoperatively.

It is tempting to conclude that early neutering may be of benefit to help inhibit the later development of male aggression in green iguanas as they reach sexual maturity. Other researchers have investigations that are more thorough in progress and publication of their results will be eagerly anticipated.

Unfortunately, the current experiment was terminated prematurely due to unforeseen circumstances: the owner sold the store due to domestic problems and the iguanas were sold or given away. Following them for another year would have been valuable. Financial and space constraints limited the sample size of animals utilized in this study.

REFERENCES