Physical Restraint of Non-domestic Pets

D. L. Graham, D.V.M.*

The accuracy of a veterinarian's diagnosis and therefore the success of the therapy regimen based on that diagnosis depend upon adequate restraint of the patient in order that a revealing physical examination can be performed and necessary treatment can be accomplished. This is no less true in the case of exotic or wild animal pets than it is in the case of domestic species with which veterinarians are more familiar. It is axiomatic that the least restraint be used that is still commensurate with the aims of the procedure and with the safety of the veterinarian and patient. In general, non-domestic species are less amenable to physical restraint than are domestic animals and it is thereby important to keep firmly in mind that the hazards imposed by their struggles against restraint and therapy must not exceed the hazard of the disease. The increasing frequency with which veterinarians are confronted by cage birds, primates, wild carnivores, and reptiles as patients points to the need for an appreciation of restraint techniques not ordinarily used in pet practice.

MAMMALS

One of the better known means of physical restraint of wild mammals is the "squeeze cage". This is a cage constructed so that one wall, usually the back, can be advanced toward the front, thus pressing the animal against the front bars or wire mesh thru which the desired treatment is performed. Injuries that result from struggling against the rigid restraining bars are not uncommon. The squeeze cage is used to best advantage when it is designed for routine use with large numbers of animals of relatively constant size such as in a large laboratory primate colony.

A far more versatile, though more humble, contrivance for use by the veterinarian in private practice is the press frame—a square or circular tubular metal frame over which is firmly stretched a nylon or cotton-twill net of one-inch mesh. The animal is simply imprisoned between the mesh and any flat surface—the examination table, or the floor or wall of its hospital cage. The necessary examination or treatment procedure is relatively easily and safely accomplished thru the slightly yielding, yet secure mesh. Access to superficial veins can usually be gained by pulling a limb (or tail in the case of larger cats) thru the mesh. Such frames are inexpensive to make and several sizes can be kept on hand.

A net about four feet deep on a sturdy hoop approximately 18 to 20 inches in diameter with a three-to-four foot long handle is an alternative or supplement to the press frame. The netted animal is forced into the *cul-de-sac* by twisting the net. In close quarters the net can be quite cumbersome but it has an advantage over the press frame in that there is access to all aspects of the animal.

The press frame or net can also be used to temporarily restrain certain animals until manual or chemical restraint can be imposed (Fig. 1).

A monkey is most easily and safely handled by holding its forearms together and parallel behind its back with one hand and extending its legs with the other hand (Figs. 2 and 3). This method is suitable for short-term restraint such as is needed for the palpebral intradermal tuberculin test; the monkey is held by an attendant as described while the veterinarian steadies its head with one hand and makes the injec-

* Dr Graham is an Instructor, Department of Veterinary Pathology, Iowa State University, Ames, Iowa.

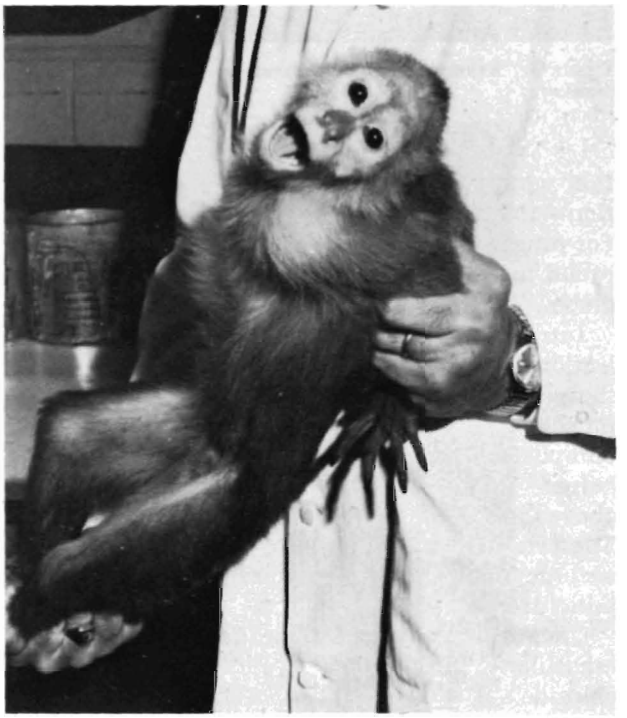

Figure 1. Examination of monkey in net.

Figure 2. Manual restraint of monkey.

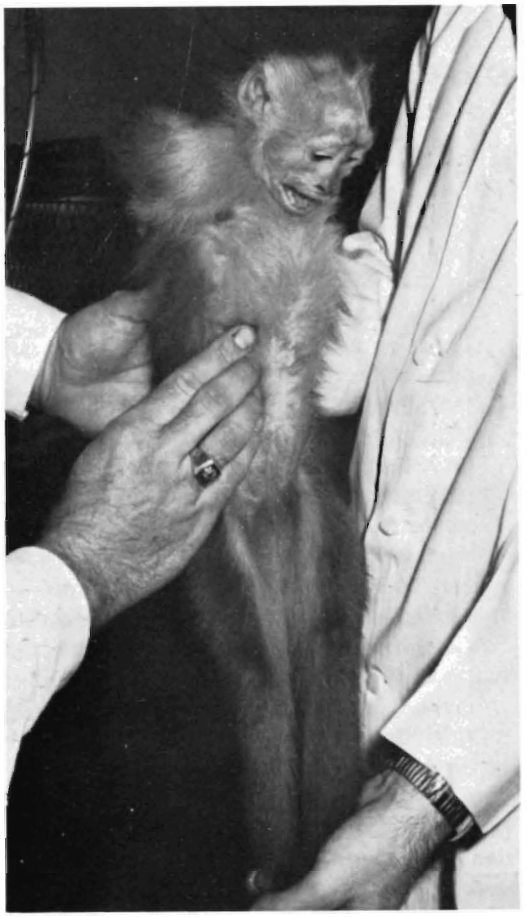

Figure 3. Examination of manually restrained monkey.

tion with the other hand. A note of caution—the needle should be kept as parallel (or tangential) to the surface of the upper eyelid as possible to avoid puncturing the globe.

Intravenous injection into, or blood collection from either the saphenous vein (on the posterior surface of the gastrocnemius muscle mass) or femoral vein are best accomplished using two attendants. One helper holds the arms (as described above), another holds both legs and tail. The veterinarian is free to prepare the site, occlude the vein, and perform the venipuncture.

Chemical restraint by means of intramuscularly injected phencyclidine hydrochloride* is the technique of choice for more prolonged restraint and sedation of primates such as is required for bandaging of wounds, coaptation of fractures, and serial radiographic procedures.

In general, the wild carnivores can be physically restrained by the same methods used on obstreperous dogs and cats with the press frame and net being very useful pieces of equipment.

It should be borne in mind that certain nutritional bone diseases (rickets and/or secondary hyperparathyroidism) are common in pet carnivores, especially exotic cats, and in New World monkeys. There is the possibility of inducing pathological fractures in such animals, so the incautious use of excessively forceful restraint methods is to be avoided.

BIRDS

Restraint methods for pet birds vary with the species depending upon its size and its ability to inflict injury with either its bill or feet.

Budgerigars and canaries are most efficiently restrained with the bare hand for routine examination and treatment procedures. Perches and other impedimentia should be removed from the cage. The bird can be cornered or trapped against the side or bottom of the cage and is grasped with the bare hand. A right-handed person should position the bird in dorsal recumbancy upon the palm of the left hand with the head and neck restrained either between the index and middle fingers or between the thumb and index finger. The body and wings are gently enclosed by the other fingers (Fig. 4). With slight modifications of this position the wings and legs can be individually extended and examined, the bill and nails can be trimmed, and pectoral intramuscular injections, oral medication, crop intubation, abdominal palpation, and other such procedures can be performed.

For jugular venipuncture, the bird should be rotated into strenal or left lateral recumbancy upon the palm (the right jugular vein is generally larger and more accessible than the left). The head is extended between the index and middle fingers. A featherless zone extending

* Sernylan, Parke—Davis & Company, Detroit, Michigan.

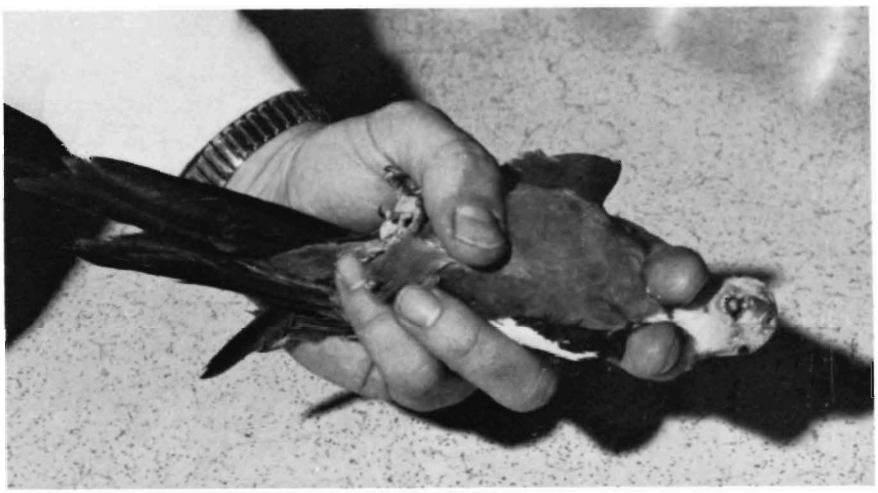

Figure 4. Manual restraint of a small bird in dorsal recumbancy.

along the dorso-lateral aspect of the neck can be found by gently blowing upon and separating the feathers. Swab the area lightly with alcohol and the jugular vein will be seen subcutaneously; it can be entered by pointing the needle either anteriorly or posteriorly, according to the preference of the operator (Fig. 5).

Light leather gloves are useful to protect against the somewhat stronger bills of small parrots, love birds, and cockatiels.

Larger parrots and macaws have amazingly strong bills and feet necessitating the use of sturdy leather gloves and a cloth shroud in which the bird can be wrapped and held by a competant assistant. Birds of prey used for falconry generally are equipped with leather straps (jesses) on each leg to prevent escape and can be rendered reasonably calm thru use of a suitable hood provided by its owner. The hooded bird, standing on its owner's gloved

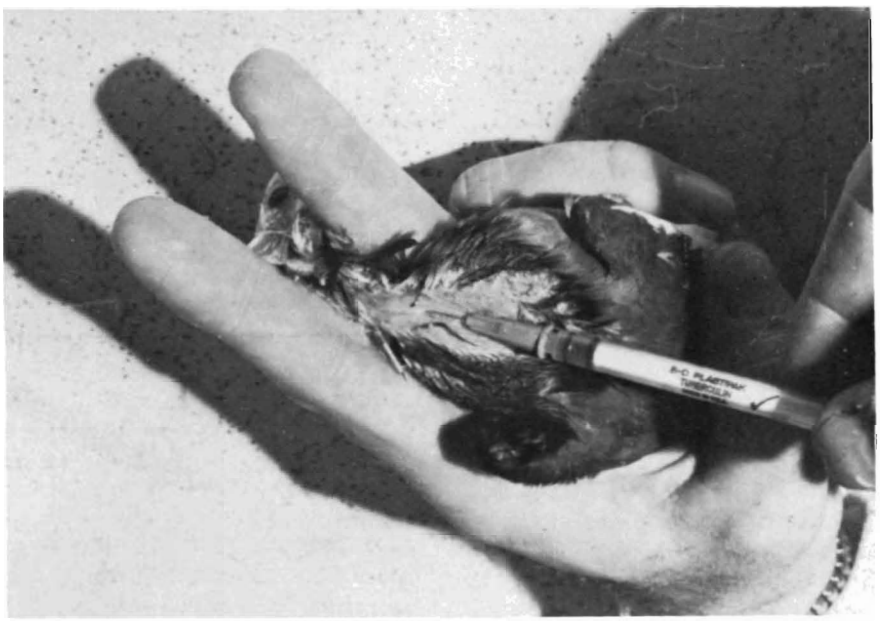

Figure 5. Small bird restrained in sternal recumbancy for jugular venipuncture.

fist is approached from behind and grasped with both hands. The handler's thumbs are parallel and lie along the dorsal midline; his fingers encircle the body, thus imprisoning the wings. The birds legs should be flexed so that the femorotibial joints are enclosed with the body and the tarso-metarsi and feet should project between the handler's ring and little fingers (Fig. 6).

For jugular venipuncture, the larger birds are held in left lateral recumbancy by an assistant and the head is enclosed and extended by the thumb and last three fingers of the left hand. The featherless zone over the right jugular vein is located and swabbed with alcohol. The left index finger compresses the vein as far posteriorly as possible and venipuncture is performed with the needle directed posteriorly by the right hand (Fig. 7). Alternate, but generally less convenient sites for venipuncture are the left jugular vein and the wing vein on the medial aspect of the elbow joint.

Figure 6. Manual restraint of large bird.

Figure 7. Jugular venipuncture in a large bird.

REPTILES

Representatives of each of the four major orders of reptiles (snakes, lizards, turtles and tortorses, and crocodilians) are occasionally kept as pets and each group poses its own particular problems of restraint.

The owner is usually (but not always) capable of restraining his reptile pet so that examination can be performed.

Many non-poisonous snakes can deliver a severe bite and so should be handled with caution, at least until their degree of tameness can be ascertained. Gloves are not necessary and are, in fact, a hindrance in handling snakes. If the snake is presented (as it commonly is) in a cloth sack, the head can be felt and grasped thru the cloth. Then the sack can be everted and the snake grasped gently but firmly by the neck immediately behind the angle of the jaws. If it arrives in a box or terrarium its head can be pressed against the floor of the container with the flat end of a small board or with the flat side of a snake hook and can be grasped as described above. When the head is secured, the body must be grasped or otherwise supported so that neck injuries due to handing or struggling are avoided (Fig. 8).

Figure 8. Manual restraint of a non-poisonous snake. Note that the body is supported and is not allowed to hang.

The mouth can be opened for examination or intubation with a smooth, round-edged plastic or rubber spatula. Extreme care must be exercised not to injure the oral mucosa and thereby initiate the all-too-common condition known as ulcerative stomatitis or "mouth rot".

Intramuscular injections are made into the heavy epaxial muscle masses on either side of the vertebral spinous processes. Subcutaneous injections are best performed on the dorso-lateral aspects of the body; the dorsal midline is avoided due to the close adhesion of the skin to the tips of the spinous processes of the vertebrae.

A wide variety of lizards are sold as pets. Even some of the smallest can nip painfully while the larger species are able to inflict not only more serious bite wounds but can cause injury with their claws and thrashing tails. Certain of the smaller lizards, if grabbed by the tail, have the ability to detach a portion of that appendage. Although in time a new, though somewhat shorter tail is regenerated, such accidents are best avoided, rather than lamented. Small lizards are most efficiently grasped with the bare or lightly gloved hand. For larger species such as iguanas heavier gloves and/or a towel can be used. One hand restrains the neck and forelimbs; the other holds the loins and hind legs. In the case of large iguanas, the tail can be tucked under one arm.

The loose skin of the neck, thorax, and abdomen provides numerous sites for subcutaneous injection of fluids. For intramuscular injections the epaxial muscles of the trunk and tail and the heavy muscles of the thigh are the preferred sites.

Turtles and tortoises in general provide few restraint problems. Certain long-necked species such as snapping turtles and soft-shelled turtles should be handled by the tail or posterior portion of the shell to avoid bites. A turtle should not be left unattended on an examination table from which it could fall and fracture its shell.

Attempts to examine the retracted head

and neck of a shy turtle can be very frustrating. In some cases, the head may be presented to view by pressing all four flexed limbs more deeply into the shell thus displacing the head anteriorly from its retracted position. Subcutaneous injections may be made thru the thin, loose skin of the axilla or groin. The thigh muscles or the dorsolateral muscle masses at the base of the tail may be utilized for intramuscular injections.

Most pet crocodilians are South American Caimans, a type of alligator, and pet specimens range in size from about ten inches to three and one half feet in length. Their ability to dorsally extend the head and neck is limited; they grab their prey (and antagonists) by a sideways sweep of the head with open jaws. They are therefore best approached from above and grasped by the neck and base of the tail. For prolonged restraint the jaws may be tied or taped closed. As in turtles, the loose skin of the axilla and groin are the preferred sites for subcutaneous injections and intramuscular injections are easily made into large dorsolateral muscles of the tail.

Because reptiles are poikilothermic, it is often suggested that refrigeration be used as a means of restraint. Although placing a bagged snake or lizard into the refrigerator for an hour or two is an effective means of immobilization, it is attended by several hazards which outweigh the technique's sole advantage of simplicity. With snakes, a common consequence of rapid hypothermia and subsequent rewarming is anorexia which frequently leads to death if forced-feeding is not instituted.

The restraint methods described above have been found eminently useful by this writer. It is hoped that the imaginative practitioner will use them and modify them according to his needs and experiences. Thru use of adequate restraint techniques on wild and exotic animal pets the busy practitioner of veterinary medicine is capable of rendering greater professional service to the occasional client who presents such a pet for examination and treatment.

What's your Radiographic Diagnosis?

William Blevins, D.V.M.*

History

On January 23, 1970 a 9 month old, female Afghan hound was referred to Stange Memorial Clinic, Iowa State University with an owners complaint of lateral deviation of the right front foot. The owner stated that the condition was first noticed about four months ago and has become progressively worse. Attempts to correct the deviation by splinting have failed.

Physical examination revealed no abnormalities except the deviated manus. The dog walked with the deviated manus rotated laterally and exhibited no apparent pain.

(Answer on page 44)

*Dr. Blevins is an Instructor in the Department of Clinical Science at Iowa State University, Ames, Iowa.