

## Handling and sample collection in birds, reptile and small mammals

Claudia Hochleithner, DVM  
Manfred Hochleithner, DVM, Dipl. ECAMS

Tierarztpraxis Strebersdorf



Mühlweg 5, 1210 Vienna  
Austria

### Catch and hold them:

**Parrots** should be caught with paper towels for hygienic reasons because many viral diseases are transmitted by feather dust.

The head of the patient is fixed between the thumb and the middle finger, the second hand holds the legs and the wings.

When retracting into the cage always release the feet first, and at the end at last the head, otherwise one could be bitten.

### RESTRAINT

- If the bird is tame, it should stay that way
- Everything that is not unpleasant should be done "playfully" and "gently"
- Use paper - towels or clean towel
  - We don't want the bird to be afraid of hands
  - No transmission of diseases – single use
  - If the hand is not visible – the bird will bite the paper or cloth
- In parrots watch the head – most dangerous!
- With raptors – watch the feet!
- Tame birds will sometimes attack
- Tame birds often threaten
- Every bird is different!
- Training HELPS a lot!!!! – Owners can train their birds but best is if you have some training!!!
- In big macaws everything has to be prepared in advance!  
They can be very noisy  
We mask them using Isoflurane

### Chemical Restraint

- This is not a lecture about anesthesia, however we like to use an open system with Oxygen and Isoflurane to sedate birds for stressful manipulations.
- DURATION of anesthesia is a keyfactor – stay below 20 minutes!!!!
- Mask versus Tube:
  - tube thickness may significantly reduce the volume of air flow
  - Mucous plugs

## **“PUT IT DOWN” LIST – or STOP IT NOW!!!**

If panting and open mouth breathing persist...

If releasing the head does not cause the bird to attempt to bite...

If the bird does not bite at a towel placed in its mouth...

If the bird's grip with both feet is not strong...

If the eyes close during the examination...

To be safe - "Put It Down!" and observe!

## **Reptiles:**

### **Lizards**

Concerning handling, most lizards are the same!

In some patients you only have to watch the tail, in others the mouth or claws, in some everything.

The rule of thumb is, one hand always fixes the head, the second hand the body, tail and back extremities in the hip area.

### **Snakes**

From handling quite simple patients, once the head is fixed firmly in the hand. It is most important not to let the head escape during the entire examination!

For very large snakes you need help with fixing, also when they appear quiet at first.

## **Blood Collection**

### **Sample Size**

### **Companion exotic mammals:**

The blood volume of a healthy ferret is 6 to 8% of the body weight. Up to 10% of the blood volume can be safely withdrawn at one time in a normal ferret.

The blood volume of most rodents is approximately 6% to 7% of total body weight, removing a maximum of 10% of the blood volume is generally safe.

In rabbits a rough guide is to safely collect up to 1% of the body weight.

### **Birds:**

The volume of blood to be safely collected in birds is dependent upon species and may vary from 5ml/100g (pheasant) to 16,3ml/100g (racing pigeon). A good rule of thumb is to collect 1ml/100g, or 1% of the body weight.

## **Reptiles:**

Reptiles have a lower total blood volume than a similarly sized mammal, 5% to 8% of their body weight, and 10% of this volume may be safely collected from healthy

reptiles (e.g. 0.5 to 0.8 ml/100g).

## **Venipuncture site**

### **Birds:**

#### Jugular vein:

The jugular vein is preferable for smaller species as well as collection larger blood volume. The right jugular vein is usually larger than the left. In many species, there is a featherless tract of skin (apterium) overlying the jugular vein; therefore, lightly wetting the feathers with alcohol in this area will help in the visualization of the vein. To collect blood from the jugular vein, the bird is properly restrained with the head and neck extended.

This site is often preferred in smaller birds but is also a frequently used in bigger animals.

#### Ulnar (basilic) vein:

The basilic vein is found crossing the ventral surface of the humeroradioulnar joint (elbow). Hematoma formation can be a common result of venipuncture on this site. Stabilization of the wing during blood collection is necessary to avoid tearing of the vein and is often difficult in the conscious patient. This site is often preferred in medium to large birds.

#### Medial metatarsal (caudal tibial) vein:

This vein lies on the medial side of the tibiotarsus at the tibiotarsus-tarsometatarsal joint. This site is often preferred in medium to large birds. The primary advantage of this site is that the surrounding leg muscles protect the medial metatarsal vein from hematoma formation, and, in some species, the leg is more easily restrained than the wing.

### **Reptiles:**

Venipuncture is usually a blind technique in reptiles, with few exceptions. Optimal patient positioning may aid visualization of the blood vessel (e.g. positioning a turtle with the head down to aid visualization of the jugular vein).

Lymphatic contamination/hemodilution may occur in most of the venipuncture sites in reptiles. The jugular vein (chelonians) and the heart (snakes) are considered best to reduce contamination of the blood sample.

### **Companion exotic mammals:**

Blood collection in companion exotic mammals is very similar to dogs and cats, thus only unique venipuncture sites will be described in detail on this section.

#### *Ferrets*

Common venipuncture sites include cranial vena cava and jugular vein. The cephalic and lateral saphenous veins are options only when smaller volumes of blood are needed.

Alcohol commonly causes an irritable reaction in ferrets.

The use of other antiseptics (e.g. chlorhexidine) is preferred.

#### **Cranial vena cava:**

The cranial vena cava is a common venipuncture site in ferrets. Anesthesia is usually not necessary with proper physical restraint and an experienced collector.

The actual site of venipuncture is likely the right or left brachiocephalic trunk or the anterior vena cava itself, depending on the point of entry and the depth of needle penetration.

This technique is safe in ferrets because of the long anterior vena cava and the caudal location of the heart in the thoracic cavity, which is approximately 3 cm from the thoracic inlet.

The cranial vena cava can also be used with extreme caution in guinea pigs, sugar gliders and hedgehogs, but accidental cardiac puncture or vein laceration may occur. It is recommended to use insulin short needle to avoid vein laceration or inadvertent cardiac puncture. Anesthesia is mandatory in guinea pigs, sugar gliders and hedgehogs even with an experienced collector.

#### ***Rabbits***

Common venipuncture sites include marginal ear vein, central ear artery, jugular vein, cephalic vein and lateral saphenous vein. Alcohol can be used to part the fur and allow visualization of the vessels. In the conscious rabbit the author prefers to collect blood from the lateral saphenous vein with an assistant supporting the rabbit against the assistant's body with a hand positioned alongside the ventral abdomen and thorax of the rabbit leaving the limbs loose.

The collector will then hold the hindlimb at the base with the non-dominant hand (with that also holding off the vein) and collect the blood with the dominant hand.

#### ***Guinea pigs and chinchillas***

Common venipuncture sites include jugular vein, cephalic vein and lateral saphenous vein. Tranquilization and/or anesthesia are usually necessary.

#### ***Hedgehog***

Common venipuncture sites include jugular vein, cephalic vein, femoral and lateral saphenous vein. Tranquilization and/or anesthesia are usually necessary.

#### ***Rat***

Most rodents do not tolerate the level of restraint required to safely collect an adequate volume of blood and therefore general anesthesia is often necessary.

Common venipuncture sites include lateral saphenous vein, cranial vena cava, ventral tail artery, and lateral tail veins. The lateral tail veins are located on both sides of the tail and are superficial. Enter the skin with a needle at a shallow angle at a point approximately one-third down the length of the tail. If the initial attempt at collection is unsuccessful, try again at a site closer to the base of the tail. To avoid collapsing the vessel, use a small volume syringe to withdraw the sample. The ventral tail artery courses along the ventromedial aspect of the tail, and it is not as superficial as the lateral tail veins.