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Chapter 3: Wound care

In 1 collection

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[1]VulPro

1 *Works for me* This protocol is published without a DOI.

VulPro

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ABSTRACT

This protocol outlines the steps to properly care for wounds when rehabilitating vultures.

ATTACHMENTS

Vulture_Rehabilitation_Manual_Version_2.0_.pdf

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MATERIALS TEXT

✔ Check List: Important items to have when treating wounds

- F10® SC Veterinary Disinfectant spray (water based)
- Hibitane or similar (alcohol based)
- F10® Germicidal Wound Spray
- F10® Germicidal Barrier Ointment
- Necrospray (Oxytetracycline Hydrochloride)
- PluroGen PluroGel®
- Honey (preferably Manuka honey)
- VetWrap
- Granuflex® dressing or any moisture-retentive dressing
- gauze
- cotton wool
- Elastoplast tape or other strong fabric/athletic tape
- super glue
- masking tape
- tweezers
- sharp scissors

✔ Check list: bumble-foot treatment

- Toothbrush or nail brush
- DMSO (Dexamethasone ointment)
- Baytril (soak cotton wool)
- A large amount of cotton wool, OR
- A spongy foam matting
- VetWrap
- Elastoplast tape
- Nuflor (inject via IM)

SAFETY WARNINGS

Most medical treatment needs to be undertaken by a registered vet, vet nurse or para-veterinarian. Procedures such as prescribing medication, injections and some forms of fluid administration should only ever be done by one of the above mentioned, registered individuals

ABSTRACT

This protocol outlines the steps to properly care for wounds when rehabilitating vultures.

Maggots

1 Observe all wounds for maggots and remove the maggots by physically picking them out.

2 If not all maggots can be removed by hand, liberally apply honey to the wound which will smother the maggots and draw them upward and out of the wound.

Ectoparasitic wound preparations, such as 'F10 Germicidal and Insecticidal Spray' **should not be used on**

vultures as the permethrin ingredient can be toxic to the patient. You do not want to simply kill the maggots and leave them within the wound site. Necrospray and F10 Germicidal Barrier Ointment, as well as F10 Germicidal Wound Spray will kill the maggots which will then need to be picked out of the wound.

Closed vs Open Wounds

3

It is important to first make the distinction between wounds that will require surgical closure (intervention) and those that will heal by second intention (the body's natural healing process). Will the wound need to be stitched or otherwise sealed closed? Deep, fresh wounds with edges that can be easily apposed will typically fair better, and heal faster, with surgical intervention. Shallow wounds with unapposable edges, e.g. burns, will need to close over naturally. This is a much slower process and the wound must be kept moist and clean throughout. The wound itself should not be the only consideration when opting for a surgical or non-surgical approach. Healing by second intention inevitably involves regular handling to dress wounds, change bandages etc., and is always an important factor to consider when treating wild animals. Surgical closure will require a general anaesthetic which is not always ideal in a weak/unstable bird. It is advised to consult your veterinarian to discuss the options.

4 If the wound needs to be surgically closed, it is critical **not** to put anything inside the wound which may impede the healing process. It is vital that contaminated/infected wounds are **not** stitched closed immediately. In addition to contaminants, a proportion of tissue within the wound will degrade and encourage infection.

5 Place the patient on a course of antibiotics for 48 to 72 hours, while cleaning and flushing the wound, to reduce the likelihood of post-surgery 'wound breakdown'.

Honey has antiseptic properties and is a suitable substance to pack into a contaminated wound. F10 Germicidal Barrier Ointment will also improve the wound environment.

6 Debride the area, meaning all the dead (necrotic) tissue should be removed. This can be done by hand or with a clean scrubbing brush, toothbrush or scalpel blade.

When deciding what tissue should be removed, assess the colour and ease with which it can be removed. Light pink tissue is viable and should not be picked. No dead or rotting tissue should require excessive effort nor cause excessive pain in its removal. Debriding will cause some light bleeding. If the bleeding becomes excessive, stop. You are probably removing healthy tissue; necrotic tissue has a poor blood supply.

7 Next, disinfect the area with a water-based disinfectant spray such as F10 SC Veterinary Disinfectant.

8 Keep the wound moist.

The wound requires a moist environment to form a ‘granulation bed’, a vital stage in the healing process. A dry wound will heal slowly and may cease healing altogether. Wound gels, such as PluroGel work very well in keeping wounds moist. Hydrocolloidal dressings, such as Granuflex encourage a moist environment to optimise healing. Granuflex and similar dressings (e.g. Allevyn Thin) will not adequately stick to the wound if creams or ointments are applied. This moisture-retaining dressing can be secured in place by covering with a VetWrap bandage and/or Elastoplast tape. It is easy to apply VetWrap too tightly and thus it is helpful to unroll and then re-roll the VetWrap and Elastoplast tape prior to applying it on the bird to avoid the bandage being too tight. A bandage that is too tight can restrict circulation, overflex joints, or cause discomfort and therefore interference.

9 If the wound is left open, keep it clean and moist and do not allow it to dry out.

It is important to keep in mind that a constantly moist wound brings a real risk of attracting flies. It can become a breeding ground for flies, midges, and bacterial infection. The best product for fly-infestation is F10 Germicidal Barrier Ointment and it should be applied very thickly and as often as needed until the wound heals.

10 Re-assess and rebandage wounds every 2-3 days. If maggots are present, remove them and assess the wound daily. Changing the bandage more frequently is stressful, but the treatment of every case should be considered individually, as more attention may be required.

Infection

11 If the wound is infected, you will see signs of inflammation. This includes reddening and/or swelling of surrounding tissue, heat and discharge (typically pus). If a wound shows signs of infection, place the bird on a course of Amoxycillin-Clavulanate (Synulox) antibiotics.

Bee stings/snake and other animal bites

12 First, stabilize the bird which means it will likely need to be put on an IV drip and given antivenom. In these cases, consult with your local veterinarian and seek immediate action.

Typically, with these injuries, the wound is not as problematic as the venom itself. *Gyps* vultures have been successfully saved through antivenom treatment.

13 With puff adder bites and multiple bee stings, the skin will become necrotic and cannot be stitched. If this is the case,

keep the entire area very moist.

14 To counterbalance the risk of infection and fly eggs, keep the bird in a relatively sterile environment until the exposed wounds heal.

15 Carnivore bite wounds are typically highly infected due to the pathogens found on the teeth of carnivores. Never suture or otherwise close the wounds. Clean the wounds daily. Administer a course of antibiotics.

Bumble-foot

16

Bumble-foot (Fig. 8) is the colloquial term for inflammation and/or infection of the plantar aspect of the feet. In vultures, this can be seen as large swellings, typically on the underside of the foot, along with scaling/cracking.

Bumble-foot in vultures is almost always the result of a pressure sore initially affecting one foot. So, if one leg is damaged or painful, the bird takes excessive weight on the 'good foot'. This excessive weight results in a pressure sore. Bacteria living naturally on the skin pass through the compromised skin, giving rise to a cellulitis (infection of the tissues between the skin and the bones of the foot). The foot swells, with the bird still standing on it, squeezing the blood supply out and preventing normal circulation, so the infection cannot be naturally controlled. As the foot is painful, birds often place too much weight on the opposite foot, resulting in bumble-foot in that foot also.

The best way to treat bumble-foot is to prevent it altogether. Birds which have injured legs or hips and can only bear weight on one leg are at great risk of developing bumble-foot in the non-affected, weight-bearing leg. The risk of bumble-foot can be reduced by placing a corn plaster or doughnut shaped dressing on the (at risk) foot, relieving pressure on the ball. Vultures do not always tolerate dressings on their feet. In these cases, an alternative is to ensure the substrate of the enclosure is weight absorbing (e.g. course sand and rough bark on perches) to help reduce the risk.

Figure 8: Image showing typical bumble-foot in a bird of prey's feet

Place the bird on a course of appropriate antibiotics (e.g. Nuflor) and bandaged the foot as per the instructions below. Preferably, take a microbiology swab for culture prior to administering any antibiotic. This information allows for a more directed antibiotic therapy and reduces the risk of resistance or treatment failure.

Step-by-step guide to bumblefoot treatment

17 Clean the area and scrub vigorously with disinfectant spray and a toothbrush or nail brush.

18 Cover the surface of the infection with DMSO (Dexamethasone) ointment.

19 Prepare a doughnut-shaped cotton wool bandage (Fig. 9) to place around the bulge of the infection (granuloma) to reduce the weight which is placed on the bulge directly. Alternatively, one or two layers of a corn plaster shaped dressing may be cut from the thickest available yoga or camping foam matting. Soak the cotton wool or foam in Baytril antibiotic.

Figure 9: Doughnut-shaped bandage, note the hole in the middle of the bandage

20 Place the doughnut bandage around the swelling or infected tissue and then wrap the foot and bandage with VetWrap first, and then Elastoplast tape to prevent the bird from tearing it off. The bandage will be bulky and appear cumbersome, but this is necessary.

21 As the treatment of Nuflor is repeated (every 3 days), the dressing is replaced on each occasion. The dressing should be continued until the swelling is reduced, it is not hot to the touch, and the pain in the opposite leg has resolved.

22 Treat a dry and cracked foot (but not swollen or apparently infected) such as that shown above with Preparation H (ointment rather than the gel version), by daily application for 2 weeks. Preparation H is a human treatment for haemorrhoids and is safe for use, whilst some **other haemorrhoid treatments containing local anaesthetic (any drug with an 'aine' in the name) are toxic to birds**.