

COMMON PRESENTATIONS OF INJURED NATIVE TURTLES

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Turtles may need to remain in care for extended periods while their injuries heal. The husbandry of the turtle has a great impact on the outcome of the animal. Correct enclosure, water quality and diet are essential in the prevention of conditions that are due to poor husbandry.

Shell Fractures

Cause:

Hit by car often as emerging in spring from aestivation or crossing roads to reach higher ground to lay eggs.

Clinical signs:

Cracked or missing shell is apparent with bleeding
Severity of shell damage may be obscured by soil and algae.
More serious internal injury may not be apparent.

Diagnosis:

X-ray of the turtle should be performed by the vet.
Look for broken legs, shoulder, pelvis or presence of pneumonia or eggs.

Treatment:

Shell fractures are contaminated open wounds. The shell is continuous with the blood supply of the turtle. Exposure of the bone of the shell causes bacteria from the skin to enter the blood supply.

Assessment

The severity of the fracture is often best assessed after gentle cleaning of the shell. This is performed with salty water or 1% iodine and a toothbrush.

Once the severity is assessed, a prognosis can be reached.

A grading system can be used to assist in the decision-making process.

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| I | Minor crack – non-displaced and involves either carapace or plastron. |
| II | Major crack – non-displaced and involves either carapace or plastron. |
| III | Major crack – non- displaced and involves both carapace and plastron. |
| IV | Major crack – displaced segments of either shell. |
| V | Major crack - displaced and missing segments |
| VI | Major crack – displaced, missing pieces with exposure of guts, laceration of pleuroperiosteum. |

Grade I – III can be repaired by second intention healing and possibly simple surgery.

Grade IV – V can be repaired. However, this may involve up to 1-2 years in care, surgery under anaesthesia and greater likelihood of complications.

Turtles with shell defects are not predator-proof and should not be released.

Grade VI! should be euthanased.

Initial treatment

The fracture is treated as a contaminated wound.

Antibiotics such as **enrofloxacin** 5mg/kg once daily are given. Oral **enrofloxacin** is used in preference to injectable to reduce the likelihood of sterile abscesses that occur where the injection is given.

Antibiotic cover continues for 1-2 weeks while healing begins, and can be continued for up to 1 month after surgical repair.

The fracture is cleaned daily with 1% iodine and a cream such as **Silvazene** is applied to assist healing and treat infection topically. The fracture is covered in a waterproof dressing such as **Opsite** (Smith & Nephew) or **Duoderm** (Bristol Myers-Squibb) to permit the turtle to be placed in water for 1-2 hours a day to drink, eat and urinate without further contamination of the wound.

Debriding under anaesthesia by the vet using a dental burr may be required to remove necrotic edges of bone and permit healing in this stage.

Dry-docking (leaving turtle out of water altogether) is not recommended. If it is performed, the turtle is weighed daily and docking stopped when 10% of body weight is lost.

Surgical treatment

Once the infection has cleared, surgical intervention may be required to stabilize loose fragments. Fiberglass is no longer considered to be safe to use as it releases heat and kills the tissue. Any resin that gets into the fracture will stop healing. The edges can be wired together under anaesthesia. Dental products such as **methyl-methacrylate** or **Glass Ionomer Cement** can be used to provide a waterproof seal and fracture stabilization.

Shell rot

Also known as Shell Cutaneous Ulcerative Disease

Cause: Abrasive cage furniture traumatizes the skin.

Poor water quality permits bacteria to damage the skin

Clinical signs: Circular areas (ulcers) where the skin is lost on the shell.

Affected areas are discoloured compared to normal skin.

Treatment:

An antibiotic such as **enrofloxacin** 5mg/kg once daily are used in severe cases. Allow the shell to completely dry out for 1 hour a day.

Daily application of 1% iodine to affected areas. Iodine is antifungal and active against some bacteria.

Add salt 5g/L to the tank water may also assist to control the infection.

Prevention:

Monitor water quality in the tank on a weekly basis using a test kit and perform 25% water change weekly. Remove abrasive furniture.

Fungal Skin Infections

Cause: Poor water quality due to infrequent water changes.

Turtles eat and drink the water they also urinate and defaecate in!

Clinical signs: White strands on skin that is hard to remove or ulcers on the skin.

Treatment: As for shell rot above. However, antibiotics are not required.

Trauma - Broken legs

Clinical signs: Not using the affected leg tends to drag when swimming.
Diagnosis: Seen on radiograph.
Treatment: Broken legs can be fixed by simply taping the leg inside the shell for 2-3 months. This restricts movement and allows healing. Restrict walking.

Trauma – Predation Wounds

Cause: Dog bite wounds
Clinical signs: Shell is crushed or broken by the bite.
Damage to gut by teeth penetrating into the body cavity.
Prognosis: Guarded – depends on severity.
Treatment: Gentle clean and debride with warm salty water.
Begin antibiotics – enrofloxacin 5mg/kg daily by mouth.
Cover wounds with Duoderm or Opsite to provide waterproofing while secondary intention healing occurs.

NUTRITIONAL PROBLEMS

Hypovitaminosis A

Cause: Diet low in vitamin A (a meat-only diet)
Clinical signs: Swollen eyelids, not eating, death,
Respiratory signs – wheezing, gaping,
Treatment: Provide varied diet & supplement
Give injectable vitamin A 5000IU weekly for 2 weeks.

Metabolic Bone Disease

Cause: Usually seen in young turtles under growing stress.
Lack of access to sunlight or UV B lighting
Incorrect diet – no supplements of Calcium or vitamin D.
Clinical signs: Weak, drooping head, unable to swim or get out of water.
Shell curves and loses its flatness.
Treatment: Calcium Sandoz 1ml/kg once daily for 1- 3 months
Address diet – add supplements.
Provide access to sunlight for 20 minutes twice weekly
Provide access to UVB lighting (Reptisun 5.0) within 20cm of the area that the turtle basks.