

## Use of Respond 2400XL Laser to Treat Head Wound on Screech Owl- Abbreviated Case Study Report\*

(\* For complete case study, see page 3)

### June 12, 2008, juvenile male screech owl found hyperthermic, nearly

drowned in a pond. Scalp lacerated, maggot infested, left eye closed and maggot infested, right hock edematous.

June 13 exam by DVM found lacerations on scalp believed due to predator attack.

Scalp from eyes to caudal portion of skull removed due to injury and infestation.

Viability of site was questionable. Left

globe intact, no blood, infestation cleaned and treated for conjunctivitis. Oral Baytril,

topical Ciprofloxacin, and Flurbiprofen given; diluted Chlorahexidine applied to wound. Photo taken June 16, 2008, three days post surgery.



### Rehabilitation and Therapy Protocol-Initial



Due to concern that tissue would become necrotic, low level laser therapy was initiated. Dosage of 1 J/cm<sup>2</sup> was delivered (F1) with 2400XL laser, 500mW probe, total treatment six to eight joules, once daily. Treatments 6/13, 6/14, 6/20, 6/21/2008 (four treatments). June 20, 2008 DVM rechecked patient, tissue on dorsum dry and healthy, no necrosis, left eye resolved.

Photo taken June 18, 2008 (two laser treatments).

### Rehabilitation and Therapy Protocol-Extended

Consensus among Doctors regarding total wound closure and feather follicle re-growth was mixed. Additional low level laser treatments were ordered to close the wound and stimulate follicle re-growth. Over next two months, additional therapy administered on four occasions, 7/5 and 7/6/2008 and 9/11 and 9/12/2008 using above protocol. In September, the owl's minor moult revealed pinfeathers in lacerated area and on eyelids.

### **Follow-up assessment**

Due to re-growth of feathers, decision to over-winter the patient and allow full moult in 2009 to increase survival potential.

The Respond Laser worked very well to expedite healing of the scalp laceration, but also appeared to stimulate feather re-growth in area with severe damage to follicles. The owl did not become stressed because of the speed of the laser treatments. Photo taken October 10, 2008.



Photos and Case Study courtesy of Orchard Park Veterinary Medical Center  
Contact DM Testa, LVT, CCRP

The Use of Low Level Laser Therapy to Treat a Head Wound On an Owl  
Orchard Park Veterinary Medical Center  
DM Testa, LVT CCRP

Signalment: Juvenile Male Screech Owl \_\_\_\_\_

History: On June 12, 2008, the owl was found hyperthermic while nearly drowned in a pond. His scalp had been lacerated and he was infested with maggots. The left eye was closed and maggots were lodged between the eyelids and globe. His right hock was edematous. The owl was resuscitated then warmed up. Maggots were treated by using an ivermectin dilution, flushing, and manual removal.

Physical Exam Findings: The following day, the owl was examined by a DVM. It appeared that he had been attacked by a predator (hawk or owl). His scalp (dorsum of the head) from the eyes to the caudal portion of his skull was removed because of the damage done by the laceration and maggots. The underlying tissue was clean but it was questionable whether the site would be viable.

The left eye globe was intact. There was no blood in the chamber. One dead maggot was flushed out. The eye was treated for conjunctivitis.

The owl was placed on oral Baytril (11.37mg/mL), topical Ciprofloxin (1gtt OS TID) and topical Flurbiprofen (1 gtt OS BID). A diluted Chlorahexidine solution was applied to clean the wound area BID.

Medical and Rehabilitation Treatment: Because of the type of wound and the possibility of the tissue becoming necrotic, it was decided to try a course of low level laser treatment to facilitate healing. The Respond System 2400XL HPLP was used at 1J/cm<sup>2</sup> at a frequency of one. Six to eight joules per whole body were given per treatment once daily. The owl was treated on 6/13/08, 6/14/08, 6/20/08, and 6/21/08 for a total of four treatments.

On 6/20/08, the owl was rechecked. The tissue on the dorsum of the head was dry and healthy. There was no necrosis. The left eye had resolved.

The next issue was whether the wound would close and if any feather follicles regrow in that area. The consensus among doctors was mixed.

Over the next two months, the owl again received low level laser treatments at the above protocols on 7/05/08, 7/06/08, 9/11/08, and 9/12/08 in an effort to close the wound. During the month of September, the owl went through a minor moult. Pinfeathers reappeared in lacerated area and regrew on his eyelids.

Follow-up and Assessment: Because of the promising regrowth of feathers, it was decided to overwinter the owl and allow him to go through a full moult in 2009. The Respond System 2400XL HPLP worked very well to expediently heal the scalp laceration but also appears to be able to stimulate feather regrowth in areas that have experienced damaged feather follicles. Because the low level laser treatment was able to be completed very quickly, it did not stress out the owl.