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Veterinary Practice News

THE INFORMATION LEADER FOR VETERINARY PRACTICE AND BUSINESS

Laser Promotes Faster Healing, Less Scarring

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For Veterinary Practice News

A dog attack left Benji the Pomeranian with deep, open wounds and skin loss.

Patient

Benji is a friendly 5-year-old, 6-pound Pomeranian who loves to make his neighborhood rounds unencumbered by a leash.

Problem

Dog owner Selda King of Stuarts Draft, Va., let Benji out one morning, regrettably unleashed. Benji came home with huge gaping wounds, the victim of an attack by another dog.

After assessing his extensive soft-tissue injuries and loss of skin, emergency veterinarians didn't give the little dog much hope of recovery. They recommended euthanasia.

King refused to accept that recommendation and persuaded David Parker, DVM, at her usual veterinary clinic, Clair Park Animal Hospital, to perform surgery to close Benji's wounds.

Dr. Parker tried to stitch up three large wounds but the skin kept falling away. A life-threatening second surgery attempted to minimize the size of the wound. Clair Park veterinary technicians visited Benji at home to change his dressings every day, hoping for the best.

While they waited to see how Benji would recover, King's friends and neighbors set about collecting money to pay for the expensive surgery and medications as well as the extensive treatment that would be required while the little dog healed.

The Mosby Foundation, after a fundraiser and public pleas for help, underwrote a significant portion of Benji's veterinary care. The nonprofit charitable foundation is nationally recognized for caring for dogs in need, including those who have been injured or abused.

During the fundraising efforts, Terri Sears, DVM, of TenderCare Veterinary Center of Fishersville, Va., learned of Benji's plight.

Treatment Plan

Dr. Sears had just purchased a Class IV Companion Therapy Laser for her practice. She offered to give Benji free laser treatments to facilitate wound closure.

"Laser not only stimulates healing, but it decreases scar formation," Sears said. "It also stimulates the immune cells, decreases infection and decreases pain. And because laser works well on skin, muscle, joints and nerves, it was a good treatment choice for Benji."

Sears said the invisible light beam puts laser energy into the cells, causing them to reproduce faster and the wound heals

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more quickly and with less pain. The laser also dilates vessels at the site, increasing blood flow to the area and reducing swelling.

Sears' notes show that laser treatment was administered to Benji on average once every third day.

At first, the wound area was treated with two cycles through the device's "Contaminated Wound" protocols. The target dose was 3-5 Joules/cm^2; 2W/30 sec/20,500, 5,000, 10,000 Hz.

(The rationale: Pulsed laser energy at 20 Hz reduces pain, at 500 Hz reduces edema, at 5,000 Hz accelerates healing and at 10,000 Hz has an anti-microbial effect. Response is dependent on achieving a target dose of 3-5 Joules/cm^2.)

As healing progressed, operator-defined protocols delivered 3-5 Joules/cm^2.

Sears began laser treatment on Benji on Feb. 10 and noted that on Feb. 15 the biggest wound measured "0.75 inches across the top, 3.25 inches across the widest part."

Less than a month later, on March 9, the wound measured 1½ inches across and the top part was closed.

By April 14, Sears's notes say: "Wound is almost completely healed. Only a small superficial area is left. Looks great!"

The gaping wound was closed without skin grafts. The effects of laser therapy are evident as new skin and fur appear.

Back at home, Benji is "a smart little cookie and just plain rotten," says his adoring owner, Selda King.

Results

The loss of skin in this injury required significant areas to heal by contraction and epithelial migration. "On presentation," Sears said, "this wound had potential for requiring grafting of skin for complete closure."

She said the wounds showed "rapid healing with faster than expected granulation and successful epithelial migration. Skin grafts were not required.

"Normal healing of a wound like this ranges from 0.5-1.0 mm per day," she said. "We have been measuring Benji's wound and calculated Benji's healing rate since we started and it is 1.6 mm per day.

"If we use an average healing rate of 0.75 mm per day, the laser increased his healing rate by 113 percent," she said, "more than double [what is expected].

"We are impressed."

Sears said Benji's new skin "is for the most part supple." His fur is growing back. She is not seeing much scar tissue, which can sometimes inhibit a dog's normal movement.

"I think the scar tissue would have been more prevalent without the laser," she said. "He could have had more problems functioning and moving as a normal dog if a ridge of scar tissue had developed at the wound site."

Literature studies document an increased rate of fibroblast migration in wound healing with Class IV laser therapy. This case illustrates the benefit of that effect, Sears said.

Long-Term Prognosis

Sears said Benji's prognosis for a normal life is excellent. She said he is totally healed and back to his normal activities. Because of the reduced wound scarring, he has no movement restriction and no physical limitations.

The owner, King, reported that Benji is back playing with his ball and behaving normally. "He's a smart little cookie," she says, "and just plain rotten."

Keeping him on a leash during walks and fencing off a portion of her yard are two precautions King has taken to prevent future problems. ●

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