

## Case Report: Usage of V-PET™ for wound healing in an Equine Laceration

Veterinarian: **Dr. Gena Viator of Keller Animal Clinic in Keller TX**

### **Patient Data**

**Patient Name: Casual Grace**

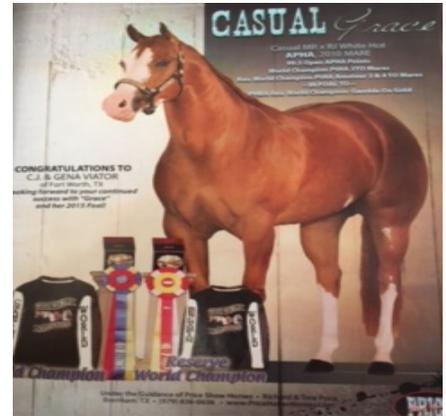
Breed: APHA/Paint

Age: 6

Sex: Mare

### **History**

Casual Grace, a sorrel overo, APHA (paint) and a PtHA (pinto) 6 year old mare. She was bred to Intensions (at 3 Nails Ranch) for a late January foal.



### **Injury Description**

On the morning of August 5<sup>th</sup> 2016, Dr. Gena Viator went to feed Grace and the other mares in their pasture. Dr. Viator observed a large laceration on Grace of the RR leg from the hock to just above the fetlock. The injury was a degloving of a large portion of the surrounding tissue and folding under of a large flap. The edges of the laceration were undermined and were not adhered to underlying tissue.

### **Treatment Modality Rationale**

Wound healing is common clinical problem that can result in a complicated non-healing challenge. Injury to the skin results in a series of events that includes inflammation, new tissue formation, and tissue remodeling.(1) The structure of skin includes the epidermis (the surface layer) and the dermis (deeper layer) that together form a protective barrier structure against the environment and prevent water loss.(2) Upon injury, there is a release of a complex group of growth factors and cytokines from the serum and from activated degranulating platelets.(1) This process consist of three major phases – inflammation, tissue formation, and tissue remodeling – these phases overlap in time and involve parallel and interrelated pathways of activation and suppression.(2) The mechanism of action of PRP is highly reviewed by Lacci et al in 2010 in the *Yale Journal of Biology and Medicine*. (3) To summarize, “PRP functions as a tissue sealant and drug delivery system, with the platelets initiating wound repair by releasing locally acting growth factors via alpha granule degranulation.”(3) Please refer to this great review for details on the array of growth factors and trophic functions of platelets and other components of PRP.

This case study demonstrates the therapeutic use of Platelet Therapy from the V-PET™ kit.

### **Treatment application**

Dr. Viator: “Finding the wound on the morning of August 5th when I went to feed, there was substantial swelling to the leg and she was obviously lame. The wound was dirty and at first glance I could not assess the extent of the wound. I brought her into the barn and cleaned the area and realized instantly that this would have to heal by second intention. The edges were undermined and not adhered to any underlying tissue and there was a large "flap" at the top of the horizontal wound that I was afraid we would lose to necrosis. After

thoroughly washing (hydrotherapy) and cleaning the wound with betadine, I then collected blood from the mare with the V-PET™ kit for Platelet therapy treatment, a filtration type of PRP. I used half of the concentrated Platelet product on the Telfa pads and applied them to the wound and finished the wrap with brown gauze, cotton padding and Vetrap. Two days later (August 7th) I changed the bandage and used the remainder of the platelet solution from the first blood collection on the Telfa pads. On the August 7th bandage change I was amazed at how healthy the wound looked and how clean it was. The swelling had dissipated significantly. The bandage was changed and the wound had hydrotherapy every two days until August 14<sup>th</sup> and at that time I went to every 4th day bandage changes. Silver sulfadiazine cream was used on the Telfa pads after the second bandage change beginning on August 9th. Cold Laser treatment was started beginning September 2nd at each bandage change. On September 11th excess granulation tissue was removed from the upper part of the wound using a #10 blade. The wound was healing really nicely and I suspected it would be completely healed in another 10-14 days with minimal scarring. As this mare is one of our multiple world champions and was in foal to a five time world champion, I was really worried about what we could use on her wound for treatment and I have been very pleased with the V-PET™ Platelet treatment and her healing process. It was comforting to know that this type of PRP system was autologous and would not be deleterious to this **valuable mare or her unborn foal.**”



**Initial Wound**



**30 days post (granulation tissue)**



**42 days post**



**45 days post**



## 60 days post- Grace back out to pasture

### Summary

For most of us, it's a familiar scenario: An equine patient sustained a wound nasty enough to require veterinary care. When a horse has a wound, even a large one, don't panic. With your prompt attention, and proper veterinary care, chances are it will heal. It should be cleaned, debrided and treated, followed by a daily routine of bandage changes. If the wound doesn't heal there's always a reason. Scrutinize the wound each time you go about the task of removing the old dressing and putting on the new. With a strategic approach and using the tools and products now available, such as Platelet Therapy, one can help and speed up the healing process.

### References

1. Werner S, Grose R. Regulation of wound healing by growth factors and cytokines. *Physiological reviews* (2003) **83**(3):835-70. doi: 10.1152/physrev.00031.2002. PubMed PMID: 12843410.
2. Rieger S, Zhao H, Martin P, Abe K, Lisse TS. The role of nuclear hormone receptors in cutaneous wound repair. *Cell biochemistry and function* (2015) **33**(1):1-13. doi: 10.1002/cbf.3086. PubMed PMID: 25529612; PubMed Central PMCID: PMC4357276.
3. Lacci KM, Dardik A. Platelet-rich plasma: support for its use in wound healing. *The Yale journal of biology and medicine* (2010) **83**(1):1-9. PubMed PMID: 20351977; PubMed Central PMCID: PMC2844688.