

**BIOMEDICAL & VETERINARY SCIENCES
GRADUATE PROGRAM**



ANNOUNCES

The Master of Science Seminar and Examination of

Elodie VerHulst

“Comparison of conjunctival pedicle flap adherence between Tisseel[®] fibrin glue, *ethyl* cyanoacrylate adhesive, ReSure[®] hydrogel sealant, and conventional suturing with 8-0 VICRYL[®] suture”

Wednesday, January 18th, 2023

9:00 AM

VMIA 220

Bio



Elodie VerHulst is a Doctor of Veterinary Medicine who graduated from Auburn University. After graduating, she moved to Blacksburg, VA, where she completed a rotating internship and stayed on for a residency in comparative ophthalmology. After residency, Elodie will be practicing veterinary ophthalmology at a multi-specialty private practice in Greenville, South Carolina.

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Presentations

Poster - Comparison of conjunctival pedicle flap adherence between Tisseel® fibrin glue, ethyl cyanoacrylate adhesive, ReSure® hydrogel sealant, and conventional suturing with 8-0 VICRYL® suture

Lay Language Abstract

Conjunctival pedicle flaps are one of the most frequently employed surgical interventions to address sight threatening corneal disorders in companion animals. Due to its redundant nature and close proximity to the corneal surface, conjunctival tissue is readily available for grafting to the cornea. It is surgically dissected to appropriate size and repositioned over the corneal defect where it effectively aids in healing through direct provision of structural support and indirectly via its rich blood supply. Securing the conjunctiva to the cornea is typically achieved through suturing. Corneal suturing is technically challenging and can result in prolonged surgical times, increased corneal edema, increased scar tissue, foreign body reaction, abscess and dehiscence.

In human ophthalmology, a number of sutureless techniques to affix ocular tissues are being explored. Specifically, these approaches include synthetic tissue adhesives, bioadhesives, and hydrogels. The proposed advantages of tissue adhesives over suture, include reduced operation times, watertight closures, decreased foreign-body reaction and inflammatory response, faster healing times and increased ability to induce regeneration of the original tissue architecture.

The purpose of this study was to determine the strength of four different adhesive methods when binding conjunctival tissue to cornea.

40 ex-vivo porcine globes underwent conjunctival pedicle flap procedures. Each pedicle flap was secured to cornea with either Tisseel®, ethyl cyanoacrylate, or ReSure®. The corneoconjunctival flap interfaces were clamped to an accelerometer and potentiometer device, and loaded under video surveillance until the point of failure. The peak load was determined for each test and used to compare between sample types.

Examination Graduate Committee

Major Advisor/Chair:

Roxanne Rodriguez, DVM, MS, DACVO
Former Faculty Ophthalmologist - DSACS

Graduate Advising Committee Members:

Ian Herring, DVM, MS, DACVO
Faculty Ophthalmologist - DSACS

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