

**BIOMEDICAL & VETERINARY SCIENCES
GRADUATE PROGRAM**



ANNOUNCES

The Master of Science Seminar and Examination of

Adam Drury

**“Minimally Invasive, Integrated Endoscopic
Hemilaminectomy for Hansen Type 1 Intervertebral
Disc Extrusion in Chondrodystrophic Dogs”**

Friday, April 16th, 2021

9:00AM

Zoom: <https://virginiatech.zoom.us/j/87093107132>



Bio

Adam graduated with a BA from Furman University in 2001 and pursued a brief career in rugby. After deciding to pursue veterinary medicine, he graduated from the Colorado State University veterinary program in 2016. After a rotating internship and neurology specialty internship, he was very happy to land a neurology/neurosurgery residency at Virginia Tech.

Funded by

Veterinary Memorial Fund
VMCVM Office of Research and Graduate Studies

Lay Language Abstract

Acute intervertebral disc extrusion, or “slipped disc”, is a common spinal emergency in dogs, particularly in small, chondrodystrophic breeds like dachshunds. Surgery is aimed at removing the disc material causing spinal cord compression. The traditional approach, known as a hemilaminectomy, involves elevating the muscles along the spine over multiple vertebrae, followed by creating a window in the bone with a surgical burr. Minimally invasive spinal surgery, which minimizes the elevation of muscles, has the potential to decrease postoperative pain, surgical time, hospital stay, intraoperative blood loss and recovery time. This study was designed to assess the use of a minimally invasive, integrated endoscopic approach to a hemilaminectomy in clinical patients. Five dogs were enrolled with an acute, single site intervertebral disc extrusion between T10 and L5 that was no more than 2/3 the diameter of the cannula to be used in surgery. Study subjects were chondrodystrophic breeds under 15kg. All dogs had intact deep pain perception. Spinal cord compression was assessed by magnetic resonance imaging (MRI) both before and after a minimally invasive approach. If significant acute compression remained, a standard, open approach was immediately performed. Spinal cord decompression was adequate in all but one dog which required a second procedure to remove the remaining material. This same dog had accidental damage to the spinal cord during the minimally invasive approach. Three dogs eventually returned to normal neurologic status and the dog that required a second, traditional approach surgery eventually improved compared to his preoperative status. One dog was improving but euthanized eight days later due to chronic disease unrelated to IVDD. This approach is feasible for decompressing the spinal cord after a single site, acute intervertebral disc extrusion. However, like any endoscopic surgery, the procedure has a steep learning curve, and errors are more likely to happen during the learning phase.

Publications

- Nylund, A. M., Drury, A., Weir, H., & Monnet, E. (2017). Rates of intraoperative complications and conversion to laparotomy during laparoscopic ovariectomy performed by veterinary students: 161 cases (2010-2014). *J Am Vet Med Assoc*, 251(1), 95-99. doi:10.2460/javma.251.1.95
- Bartner, L. R., McGrath, S., Drury, A., Chen, A. V., Morris, A., Brewer, M., . . . Lappin, M. R. (2018). Testing for Bartonella spp. DNA in cerebrospinal fluid of dogs with inflammatory central nervous system disease. *J Vet Intern Med*, 32(6), 1983-1988. doi:10.1111/jvim.15288
- Drury, A. G., Monnet, E., Packer, R. A., & Marolf, A. J. (2018). Determination of surgical exposure obtained with integrated endoscopic thoracolumbar hemilaminectomy in large-breed cadaveric dogs. *Vet Surg*. doi:10.1111/vsu.12968

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