Butterfly™
The New Image of Health

Engaging the next generation of veterinary professionals to use ultrasound daily.

The future of veterinary ultrasound teaching and learning is in telemedicine.

A Case Study by:

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> "If we put the Butterfly iQ Vet solution in their hands, veterinary students anywhere can learn ultrasound."

Introduction

During their third or fourth year of veterinary school, most veterinary students in the United States go on clinical rotations, taking the knowledge they absorbed in the classroom and putting it into practice. Each veterinary program approaches these rotations differently, and the program at Western University of Health Sciences requires that students rotate through all specialties. These rotations include Zoological Medicine and Laboratory Animal Medicine, where you learn at a zoological facility or at a laboratory animal facility at a major university.

During the COVID-19 pandemic, stay-at-home orders in conjunction with public health and safety concerns prevented students from experiencing the traditional clinical veterinary curricula.

Instructors had to adapt to an online world and attempt to deliver experiential education during this time. Engaging students remotely can be challenging for any educator, in any discipline, at any educational level. This is an account of a new way we can deliver education to students utilizing the Butterfly iQ Vet and TeleGuidance™.

Case History

The problem we encountered was "How can we effectively teach students how to perform an ultrasound on a zoological species, such as a turtle, that they may commonly see in practice?" During veterinary school, students focus primarily on canine, feline, bovine, and equine medicine. When teaching ultrasound, it is difficult to convey technique in a lecture when students cannot see probe placement, technique, or have hands-on learning and practice. It has been shown recorded video instruction of point-of-care ultrasound (POCUS) demonstrates minimal benefit compared to hands-on instruction for first and second-year veterinary students.[1] From this, it has been recommended that a mixed-method approach to ultrasound training is required for veterinary students with limited knowledge of ultrasound.[1] Unlike in human medicine, simulators are not readily available for veterinary medicine, let alone for a variety of zoological species. How can we engage students and use a combination of methods to teach ultrasound remotely when students typically require hands-on training? With the iQ Vet, we can provide guidance and coaching to students remotely, teaching ultrasound at a distance.*

Sample Imaging Exam

Online lectures demonstrated how to perform ultrasound on turtle and tortoise species using Butterfly TeleGuidance and Zoom to broadcast a live view and real-time verbal description of the ultrasound scans using the iQ Vet. Butterfly TeleGuidance allows for remote hands-on teaching for any species, small to extra large.

What Does This Teach Us?

Butterfly iQ Vet has the capacity to live-stream both the ultrasound image and the technique of the scanner to students. This can change the way we teach ultrasound to students and veterinary professionals, regardless of location. Students can visualize probe placement, and observe the live image, additionally they could be coached through probe movements and setting adjustments, just as every radiologist is trained. Butterfly iQ Vet can allow for this type of instruction for students anywhere. The next step is getting the Butterfly iQ Vet into the hands of students and veterinarians around the globe.

Figure 1: Students' view during live ultrasound demonstration showing the cervicobranchial acoustic window on a Painted Terrapin (*Batagur borneoensis*) while imaging the heart. The heart is located in the far field of the ultrasound.

Figure 2: Live ultrasound demonstration teaching the prefemoral acoustic window on a Painted Terrapin (*Batagur borneoensis*). This image represents the kidney and the renal artery.

Reference

1. Davy, R.B., Hamel, P.E., Su, Y., Berry, C.R., Conner, B.J., 2019. Evaluation of Two Training Methods for Teaching the Abdominal Focused Assessment with Sonography for Trauma Technique (A-FAST) to First- and Second-Year Veterinary Students. Journal of Veterinary Medical Education 46, 258—263. https://doi.org/10.3138/jvme.0517-059r1

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