

Comparison of ante-mortem and post-mortem diagnosis of ovarian follicular dysplasia in Florida beef herds

H. Nobre,¹ DVM; **J. Gard**,¹ DVM, PhD, DACT; **J. Roberts**,² DVM, DACP; **J. Wenzel**,¹ DVM, PhD, MS, DACT, DACVPM; **M. Edmondson**,¹ DVM, MS, DACT; **T. Braden**,² PhD

¹ Department of Veterinary Clinical Services, Auburn University, College of Veterinary Medicine, Auburn, AL 36849-5522

² Department of Anatomy, Physiology and Pharmacology, Auburn University College of Veterinary Medicine, Auburn, AL 36849-5522

Introduction

Studies commissioned by the Florida Cattleman's Association in 2007 and 2016 found ovarian follicular dysplasia (OFD) as a primary cause of infertility in Florida beef cows. Ovarian follicular dysplasia (OFD) is a slowly progressive bilateral abnormal growth and/or development of ovarian follicles eventually transforming into Sertoli-form Granulosa Cell Tumor. Later stages OFD, grades III and IV, seem to be able to be reliably detected via ultrasound examination of the ovaries using a 7 MHz probe. The objective of this study was to determine the variation in ante-mortem and post-mortem ultrasound examination when compared to histologic findings utilizing a 7 and 8.5 MHz ultrasound probe. Our hypothesis was that a 7 or 8.5 MHz ultrasound could be utilized for detection of earlier stages of OFD.

Materials and Methods

Twenty-eight cows and heifers with subfertility and 2 "control" females from 2 Florida beef herds underwent transrectal ultrasound of both ovaries. All images were recorded and evaluated for mineralization score and follicular numbers. The 30 animals were followed to slaughter. Ovary, uterus, and oviducts were collected post-mortem. Fixed

ovaries were measured, sectioned para-sagittal through the hilus, photographed, and arranged in histology cassettes for complete examination of the cut surface. The ovaries were then graded for presence of OFD (0–IV) and other diseases. Gross morphology of fixed sagittal sections and ultrasound images were blindly compared against OFD grade in the individual ovaries.

Results

Of the ranches sampled, 86% of the sub-fertile cattle were OFD positive. At the first ranch, 10 animals had grade I OFD and at the second ranch 7 were grade I, 5 were grade II, and the 2 were grade III. There was a 94% agreement between the ultrasound and histological diagnosis of OFD. There was 100% (25/25) agreement between the 7 MHz and the 8 MHz when diagnosing OFD.

Significance

Early of grades of OFD (I & II) can be reliably diagnosed via ultrasound, utilizing 7 to 8.5 MHz or greater ultrasound probe.