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A Tradition of Leadership and Excellence in Equine Medicine

The use of ultrasound for routine reproductive work Philip M. Matthews, D.V.M.

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The ultrasound has become a familiar tool for pregnancy diagnosis in the mare and also has strong merit for use in any routine reproductive exam.

In recent years, we have learned more about how the uterus responds to the hormonal influence of a maturing follicle and how those changes appear on the ultrasound. With most mares, as the ovulatory follicle matures, uterine edema will steadily increase resulting in the appearance of large “folds” in the uterus on ultrasound. As the follicle approaches ovulation, this edema will dissipate more quickly than it came and in most mares be gone or be very slight before they ovulate. Because of this progression and then regression of uterine edema, the ultrasound then provides us with another measure by which to predict ovulation which manual palpation alone doesn't provide. The amount of edema that each individual mare will get varies, but most will get at least some as they build an ovulatory follicle. Because of the variation between mares it is important to observe this *progression* in edema for that individual mare rather than looking for the “text book” example of edema in that mare.

With the use of the ultrasound we also have the ability to measure follicles much more accurately than by palpation alone. This is an aid in ovulation prediction but has even greater value when this information is used to select the time to administer an ovulatory agent such as Ovuplant or HCG. When a mare is in heat and a follicle has developed from 34mm to 36mm in size it has an excellent chance of responding to one of these ovulatory agents and ovulation should occur within 24 to 48 hours. This allows much more predictability in deciding when to breed your mare. Your veterinarian can further define this process by observing uterine edema and coupling that information with follicular size. The end result is an enhanced ability to more accurately predict the optimal time to breed a mare; which should result in a higher conception rate and fewer “doubles” or multiple breedings.

By routine use of the ultrasound in performing reproductive exams the veterinarian also has the ability to assess the presence of uterine fluid. A *small* accumulation of clear uterine fluid can be present in the normal mare when she is in heat, however most mares have none. When fluid is present it may represent uterine inflammation or infection. It's fair to say that all veterinarians deal with the frustration of obtaining negative cultures on infected mares in spite of good culture technique and a good

laboratory. The appearance of uterine fluid can alert the veterinarian to the fact that this mare may be infected regardless of the culture results. An especially advantageous time to evaluate the presence of uterine fluid is after a mare has been bred (24 or 48 hours later). The normal mare has the capacity to clear her uterus of any seminal fluids within 24 hours, and those that don't are prone to becoming infected by contamination and should probably be treated.

Another reason to ultrasound mares when checking for ovulation is so that the veterinarian can be certain to differentiate between a follicle and a corpus hemorrhagicum (the ovulated follicle.) Even the most experienced veterinarians can be fooled when only using their hand.

The ultrasound is simply an additional tool in evaluating the reproductive status of a mare. It isn't meant to replace the speculum, the teaser or good record keeping. When all the tools at the disposal of the broodmare manager and the veterinarian are used together we can get closer to reaching our goal of more pregnancies with fewer breedings.