Management of a high-risk pregnancy in a Portuguese Water Dog
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A 5-year old female Portuguese Water Dog was presented with a history of infertility and early pregnancy loss followed by one pregnancy that produced three offspring with intensive monitoring. The patient was bred this cycle on days two, three and four after ovulation.

At 33 days gestation, pregnancy was confirmed by transabdominal ultrasonography. The serum progesterone concentration this day was 12 ng/ml. At 40 days gestation, the serum progesterone concentration decreased to 7.2 ng/ml. It further declined to 5.3 ng/ml at 43 days and 2.3 ng/ml at 46 days. Progesterone concentrations are highest at gestational days 20 to 35, reaching concentrations of 15 to 80 ng/mL.\textsuperscript{1,2} A sustained decrease in serum progesterone <2 ng/ml for greater than 24 hours will result in pregnancy loss.\textsuperscript{3,4} Use of progesterone supplementation during gestation may lead to masculinized females and cryptorchid male puppies; therefore, supplementation should be postponed to day 50 of gestation or used only when risk of pregnancy loss is imminent.\textsuperscript{3,4} Due to steadily declining progesterone concentrations, the patient was started on oral altrenogest, a supplemental progesterone (ReguMate\textsuperscript{®}, 0.088mg/kg orally once daily) at 43 days gestation.

Additionally, the pregnancy was monitored using the Whelpwise\textsuperscript{®} tocodynamic monitoring system. Terbutaline was administered starting on day 46 following documented uterine contractions. Transabdominal ultrasound was performed regularly throughout gestation to monitor fetal health and development.

At 57 days gestation, she was admitted to the hospital. Altrenogest was slowly decreased and terbutaline dosage was increased slightly due to increasing uterine contractions. At 61 days gestation, ultrasound showed good intestinal motility and well-defined fetal kidneys. Fetal heart rates decreased to 150-180 bpm and a cesarean section was performed. Six viable puppies were delivered. This case represents how to successfully manage a high-risk pregnancy in a bitch with a documented history of hypoluteoidism while maintaining fetal and maternal health.

Keywords: Progesterone, ultrasound, high-risk, pregnancy

References