of this information, it was determined that the average daily gain of this litter was 3.37 ounces (95.5 grams) per day and that the 2 puppies exhibiting abnormalities had indeed met all developmental milestones within the same timeframe as littermates. Despite receiving no nutrition beyond milk supplied by the dam, all 5 puppies were considered obese. Of note, milk supply was plentiful, presumably due to the relatively small litter size. Prior to pursuing further diagnostics, the owner elected to complete at-home physical therapy and dietary management for both affected puppies and monitor for improvement. Physical therapy consisted of passive range of motion of both hind limbs and climbing over rolled towels for 15 minutes twice daily. After 1 week of physical therapy and dietary restriction, both puppies had improved overall mobility consistent with littermates and the puppy with altered hindlimb gait had a more consistent pattern of normal ambulation. Physical therapy was performed until 6 weeks of age with continued improvement of ambulation. At 13 weeks of age, both affected puppies successfully entered training to become working dogs. This case illustrated the importance of monitoring puppy weights and the detection of early abnormalities to prepare the animal for the best outcome

Keywords: Neonatal, canine, conformation, working dog

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Recurrent uterine torsion in an Arabian mare

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An 11-year-old multiparous 270 days pregnant Arabian mare was referred for a suspected uterine torsion. On arrival the mare was colicky, tachycardic, and normothermic. A 270 degree clockwise uterine torsion was diagnosed by transrectal palpation. She was anesthetized using a triple drip regimen and rolled 5 times using the flank plank technique. The mare recovered uneventfully. Two days after uterine torsion resolution the CTUP (6 mm) was within normal limits. The fetus was alive, and the mare was discharged. Ten days later, the mare returned with another colic episode. She was examined and a 90° clockwise torsion was identified. The mare was rolled again and recovered uneventfully. One day after resolution of the torsion, serum progesterone concentrations were normal (9.88 ng/ml) but serum estrogen concentrations (765.12 pg/ml) were lower than expected at 280 days of pregnancy. There was a concern about this as estrogens are a good indicator of fetal viability and tend to decline over the last trimester of pregnancy.[1] The mare delivered a healthy colt at home at 344 days. Uterine torsion in the mare is most common in mid to late pregnancy. Suspected causes include vigorous fetal movement, rolling, a large fetus in a relatively small volume of fetal fluid, lack of uterine tone, and a deep abdomen in larger breeds.[2] Transrectal palpation is the best way to diagnose uterine torsion and identify its direction that is essential for treatment. Repeated uterine torsions during the same pregnancy are rare. This case is important to the field of Theriogenology because uterine torsion in the mare is an emergency and presents with nonspecific clinical signs. Client education regarding the urgency of colic signs or discomfort in late pregnancy is essential. Early diagnosis and treatment improve outcome for the mare and foal. Close monitoring until foaling should be recommended.

Keywords: High risk, plank flank technique, endocrinology, colic

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Dystocia and diaphragmatic hernia in a Quarter Horse mare carrying twins

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Twin pregnancy is one of the major noninfectious causes of abortion and may jeopardize the health and welfare of the mare. A 16-year-old primiparous Quarter Horse mare was referred for dystocia due to abortion at ~ 10 months of pregnancy. She was depressed, tachycardic, tachypneic, and hypothermic. Rectum and vulva were edematous and malodorous; fetal membranes were protruding from the vulva. Due to signs of septic shock, she was treated with intravenous fluid and corticosteroids prior to attempting controlled vaginal delivery. The fetus was emphysematous and in anterior presentation with bilateral shoulder flexion and lateral deviation of the neck. Due to poor prognosis, humane euthanasia of the mare was performed. On necropsy, the uterus was friable and edematous with a partial thickness tear. Dysmature, autolyzed twins were removed from the uterus. An acute diaphragmatic hernia of the large colon was also diagnosed, which may have been a complication of straining efforts and the enlarged uterus. Incidence of double ovulation ranges from 8 - 21% in Quarter Horses, with an incidence of twin pregnancy ranging from 8 - 11%.[1] Spontaneous twin reduction occurs frequently by day 40 of pregnancy in

unilaterally fixed embryos; probability of twin maintenance increases substantially with bilateral fixation.[2] The standard practice is to attempt to reduce the pregnancy to 1 vesicle after pregnancy diagnosis at days 14 - 15, prior to embryonic fixation. In this case, pregnancy diagnosis was not performed after natural breeding. The prolonged duration of the dystocia and autolysis of the fetuses resulted in severe deterioration of the mare's health. The majority (64.5%) of twin pregnancies maintained past 42 days result in late term abortion.[3] This case illustrated the importance of close monitoring of follicular dynamics during breeding, early pregnancy diagnosis, and the need for client education on the importance of adequate breeding management for the welfare of the mare.

Keywords: Twins, abortion, dystocia, diaphragmatic hernia, breeding management

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Vulvar discharge associated with exogenous estrogen exposure in a spayed Weimaraner bitch

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Vulvar discharge in spayed bitches is often associated with infections, chemical irritation, foreign bodies, anatomical defects, neoplasia, or an ovarian remnant.[1] Rarely, the discharge is associated with exposure to exogenous hormones.[2] A 4-year-old spayed Weimaraner bitch was presented for evaluation of inappetence and intermittent sanguineous vulvar discharge. The patient had elevated rectal temperature and respiration rate. Physical examination indicated presence of vulvar edema and a sanguineous vulvar discharge. Vaginal cytology revealed mainly parabasal cells, occasional intermediate cells, and abundant neutrophils and red blood cells. Ultrasonographic findings were suggestive of an enlarged, fluid-filled uterine stump, and a complete blood count (CBC) indicated leukocytosis, neutrophilia, and monocytosis. A uterine stump pyometra due to ovarian remnant syndrome was suspected and celiotomy performed. The uterine stump appeared grossly cystic and thickened. Histopathological evaluation of the removed uterine stump and ovarian pedicles revealed cystic endometrial hyperplasia and no ovarian tissue. Fifteen days after surgery, the patient presented again with a sanguineous vulvar discharge. Vaginal cytology revealed predominantly superficial cells, indicating estrogen influence.[3] Differential diagnoses included ectopic ovarian tissue, exogenous estrogen exposure, or an adrenal tumor. Further questioning of the owner revealed long-term use of a topical estrogen cream by a member of the household. Serial examinations were performed, and the cytology remained uniform, with predominantly superficial cells, indicating continued estrogen influence.[3] Progesterone and anti-Müllerian hormone concentrations were determined to rule out ectopic ovarian tissue.[4,5] Both tests came back negative. The absence of any clinical signs of adrenal disease coupled with the history of topical estrogen cream use in the household suggested that the patient's clinical signs were likely due to exogenous estrogen exposure. Several recommendations were made to prevent the exposure. Follow-up vaginal cytology and CBC evaluations were also recommended to monitor future estrogen exposure and possible adverse effects on the patient's health.

Keywords: Dog, cystic endometrial hyperplasia, exogenous estrogen, vaginal cytology

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Phimosis and preputial abscessation with draining tract in an Angus bull

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A 22-month-old, Angus bull presented for preputial laceration and phimosis with secondary cellulitis and ventral swelling cranial to the scrotum. The bull received 2 doses of ceftiofur crystalline free acid, 1 dose of transdermal Banamine, and a 5 day course of penicillin. A preputial abscess was suspected. Preputial lacerations commonly occur during breeding generally due to tissue rupture secondary to compressive force.[1] Preputial laceration and subsequent prolapse is more common in *Bos indicus* breeds due to do their redundant preputial tissue and pendulous sheaths. However, *Bos taurus* bulls are often capable of fully retracting preputial injuries leading to subsequent abscessation.[1] Prognosis is poor to guarded for return to breeding soundness.[2,3] The bull was treated daily with hydrotherapy focused on the swelling. Epsom salt poultice was applied over the swelling and a sweat wrap was applied using a support sling. After 6 days of treatment, the abscess ruptured along a draining tract that terminated near the preputial orifice. Hydrotherapy, Epsom salt