Estradiol-17β and alpha-fetoprotein as diagnostic markers for ascending placentitis in a Quarter Horse broodmare
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Placentitis is the leading cause of late-term pregnancy wastage in mares. Diagnosis of placentitis is based on clinical signs (vulvar discharge and premature lactation) and transrectal ultrasonography. While transrectal ultrasonography is a valuable diagnostic tool, early stages of ascending placentitis can be missed. Recently, estradiol-17β and alpha-fetoprotein (products of the fetoplacental unit) were shown to be reduced and elevated, respectively, in plasma of mares with experimentally induced placentitis. It remains to be determined whether these molecules are useful markers for spontaneous placentitis. A 14 year-old mare at approximately 300d gestation was presented to our clinic for premature lactation. Physical examination revealed scant greYish vulvar discharge and pronounced udder development. Transrectal ultrasonography demonstrated a combined thickness of uterus and placenta slightly above normal (13 mm) and a small area of placental separation at the cervical star. Vaginoscopy revealed an open cervix with scant purulent discharge. A clinical diagnosis of ascending placentitis was made. The mare was started on a 5d-course of gentamicin (6.6 mg/kg IV, SID), procaine penicillin G (22,000 units/IM BID), flunixin meglumine (1.1 mg/kg PO, SID), and altrenogest (0.088mg/kg PO, SID). Plasma samples were collected daily and preserved at -80°C for analyses of estradiol-17β and alpha-fetoprotein with commercial immunoassays. Following initial 5d-treatment, the mare was continued on altrenogest and trimethoprim-sulfamethoxazole (30mg/kg PO, BID) until uneventful delivery of a live premature filly 17d after admission. Treatment for sepsis was initiated but discontinued due to financial restrictions. Estradiol-17β varied from 40 to 110 mg/mL, and alpha-fetoprotein was highly variable but remarkably elevated (2-20ng/mL); both were consistent with experimentally induced placentitis. This case illustrates the usefulness of estradiol-17β and alpha-fetoprotein in a mare with spontaneous placentitis. Ultrasonographic changes were subtle enough that practitioners with limited experience scanning late-term pregnant mares could have missed the lesions present, thus both estradiol-17β and alpha-fetoprotein aided in the diagnosis.

References