ABSTRACTS

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Comparison of efficacy of two biometric parameters for prediction of the parturition date in second half of pregnancy in the bitch

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OBJECTIVES AND METHODS: Prediction of the parturition date and assessment of gestational age are essential for adequate management of pregnant bitch. Fetal biometry is a reliable method that may provide these information to veterinarian surgeon. The technique is based on ultrasonographic measurements of foetal and extrafoetal structures which size is correlated with gestational age. Yet the degree of correlation differs between parameters, and efficacy of formulas is not equal. Proper quality of measurements is another key point for obtaining satisfactory results. Depending on stage of pregnancy, amount of fetal fluids, fetal disposition and cooperativeness of the bitch, obtaining good quality measurements of one parameter may be more challenging and time consuming than another. The aim of this study was to verify if equations based on biparietal diameter (BP) and body diameter (BD) may be employed for prediction of the parturition date in second half of pregnancy in the bitch with comparable efficacy.

In this study, 18 clinically healthy, pregnant bitches, of various breeds, aged from 2 to 8 years and body weight between 6 and 30 kg (average 16.75 kg) underwent ultrasonographic examination with owner consent. The examinations were repeated twice between 37 and 59 day of pregnancy. The measurements were performed as described by Beccaglia and Luvoni (1) in case of BP and Yeager et al (2) in case of BD. Each parameter was examined at least in two fetuses and five measurements were taken. After that, mean values for each parameter were calculated. The obtained results were subsequently substituted in the following equations: for BP, days before parturition = ( mm -25.11)/0.61 in case of bitch under 10 kg of body weight and days before parturition = ( mm - 29.18)/0.7 for animals above 10 kg of body weight- as proposed by Luvoni and Gironi (3); for BD: days after LH peak = 22.89 + 12.75 x cm -1.17 x cm 2 (2). After parturition the estimated and actual parturition date were compared and accuracy of prediction was calculated.

RESULTS: In this study 36 ultrasonographic examinations were performed on 18 bitches ( 9 small size and 9 medium size). In case of BP, date of parturition was predicted within 1 day in 26 cases (71%), within 2 days in 30 cases (80%) and within 3 days in 35 cases (97%). For BD the results were 19 (53%), 28 (78%) and 35 (97%), respectively.

CONCLUSION: The results show that in case of both parameters i.e. biparietal diameter BP and body diameter BD, the accuracy of prediction of the parturition date within three days was very high. The BP tends to be more specific, what is expressed in high percentage of predictions accurate within one day (71%). This is probably due to different equations derived for small and medium sized bitches, which is of importance in late pregnancy when size differences between fetuses of different breeds are most pronounced. Although in last two weeks of pregnancy, when the volume of fetal fluids is scant, the ventroflexion of the head may cause measurements of BP challenging. In these cases BD may be applied as reliable and easy to obtain parameter for prediction the parturition date.