

staining, luminal epithelium gland integrity, stratum compactum integrity or artificial vacuolation/separation or vascular histomorphology. However, MD was significantly better than the other two fixatives in reducing the formation of cytologic artifacts in both the luminal glandular epithelium and in the cells composing the stratum compactum. Furthermore, both MD and B were superior to F in improving tissue staining contrast, whereas MD and F were superior to B in preserving luminal epithelium gland chromatin structure. The results of this study for the fixation of testicular biopsies revealed no significant difference in any of the specific categories except overall fixation clarity/quality ($p < 0.05$). However, there were clear trends indicating that MD may be better than the other two fixatives in reducing the formation of cytologic artifacts in Leydig and seminiferous cell populations and in reducing sloughing of seminiferous tubule cells. Whereas MD and F were slightly better than B in reducing artifact formation in epididymal cells and F trended better in preserving epididymal epithelial cell nuclear chromatin. In conclusion, there was no one fixative significantly superior in every category of our histomorphologic evaluation. However, MD was superior to both B and F in several categories involving endometrial biopsies and in overall testicular fixation. Additionally, MD trended superior to both other fixatives in several other categories of testicular biopsy fixation. These trends may achieve greater statistical significance as we increase the number of biopsies. These findings are important to theriogenologists because of the routine use of Bouin's fixative and its associated health and disposal hazards. A safer and perhaps superior alternative is available.

Keywords: Endometrium; Testicular; Biopsy; Fixatives; Histopathology

INDUCTION OF PARTURITION AND THE NEONATAL ACUTE PHASE RESPONSE

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Traditionally it has been considered that there are few clinical indications for induction of parturition in the mare as it has been associated with increased incidence of peri-partum complications such as dystocia and with unfavorable outcome in foals.

This study aimed to investigate the incidence of complications during foaling with induction of parturi-

tion in full term mares with a low dose oxytocin protocol and to assess whether the induction of parturition caused an acute phase response in neonatal foals exceeding that of the normal birth process.

Parturition was induced in 11 of 26 mares at full term gestation with low doses of oxytocin (0.5 ml). Calcium concentrations of the mammary secretions were used to predict full term gestation. Peri-partum complications in mares and their neonatal foals were recorded. Serum was collected from 18 of the neonatal foals (11 of which were from mares in which parturition was induced) from zero to 72 h post-partum. A commercially available ELISA (Tridelta Ltd., Maynooth, Co Kildare, Ireland) was used to measure the concentration of an acute phase protein, serum amyloid A (SAA), in serum samples from the neonatal foals. Foals were retrospectively divided into two groups, normal and abnormal, to eliminate the influence of increased endogenous SAA production secondary to inflammatory stimuli other than the birth process.

Complications that occurred with increased frequency in mares that were induced to foal included mild dystocia requiring minor assistance ($n = 2$) and placenta previ ($n = 1$) and those that occurred in mares that foaled naturally included retained fetal membranes necessitating therapeutic intervention ($n = 2$). Complications in foals from mares in which parturition was induced included slowness to nurse ($n = 1$) and abnormal neutrophil counts ($n = 3$). Similar complications were recorded in foals from mares which foaled naturally, i.e. one foal was slow to nurse and three had abnormal neutrophil counts. In the whole group, foals from mares in which parturition was induced ($n = 11$) had lower SAA concentrations ($p < 0.05$) at 12 and 24 h than foals from mares that foaled naturally ($n = 7$). When the analysis was restricted to completely normal foals, seven of which were from mares which were induced and two of which were from a natural foaling, the results were the same.

The findings of our study do not support previous allegations that induction of parturition in mares leads to unfavorable outcome in the neonatal foal. This induction protocol provides a manageable environment in which parturition is observed and complications can be rapidly recognized and dealt with.

Keywords: Induction of parturition; Acute phase response; Neonatal foal