

Safety of Palpation Per Rectum for Pregnancy Diagnosis in Dairy Cattle

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Confirmation of pregnancy status is an important component of a reproduction management program for dairy cattle. Difficulty with detection of estrus, apparent low conception rates and a relatively high incidence of pregnancy loss in dairy cattle combine to make early and accurate determination of an individual animal's pregnancy status a matter of critical importance. Early detection of non-pregnancy is the rate-limiting step in determining the interval between one insemination and the next when repeat service is necessary. Palpation per rectum is the industry standard for pregnancy diagnosis at present; however, there is a continuing debate about the safety and timeliness of this technique. The objective of this study was to test the safety of palpation per rectum for pregnancy diagnosis using diagnostic ultrasonography as a standard. The study was carried out over an entire year on 44 dairy farms in Minnesota and Wisconsin. Farms ranged in size from 30 to 600 lactating cows. Farm management varied widely and was not controlled in any way in the study. A total of 767 pregnant Holstein cows and heifers were enrolled in the study. Pregnancy was confirmed between 30 and 80 days after artificial insemination. On each farm, cattle were alternately assigned to pregnancy diagnosis by palpation per rectum using the fetal membrane slip method (FMS, n=382) or by transrectal, B-mode, real-time ultrasonography (US, n=385). Uterine manipulation was required of all cattle in the FMS group in order to confirm the presence of palpable fluid. This was followed by retraction of the uterus, if necessary, to accomplish palpation of the chorioallantois. Visual confirmation of fluid and a live fetus was accomplished in the US group without physical manipulation of the uterus. Three experienced large animal clinicians conducted all the examinations. Outcomes for each pregnancy were recorded as: Calved (a live calf delivered within +/- 15 days of AI due date); Aborted (a confirmed abortion, re-insemination or animal that was known to be non-pregnant at the time she left the herd); Culled-unknown (an animal that left the herd without re-confirmation of her pregnancy status). The outcome was available for all but 160 of the cattle originally enrolled. Complete herd dispersals accounted for almost all of the deleted cattle so the proportion of FMS and US treatments was not affected. The outcome for pregnancy diagnosis by the FMS method (275 Calved, 13 Aborted, 15 Culled-unknown) did not differ from the outcome for US pregnancy diagnosis (263 Calved, 17 Aborted, 24 Culled-unknown) ($P=0.24$). These results illustrate the safety of transrectal palpation for pregnancy diagnosis after 30 days in cattle when conducted by a skilled clinician.

Keywords: dairy cattle, pregnancy diagnosis, ultrasound, palpation