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EFFECT OF UTERINE PALPATION 35 DAYS AFTER CALVING ON PLASMA
PROSTAGLANDIN CONCENTRATIONS IN MATURE BRAHMAN COWS AND
FIRST-CALF BRAHMAN HEIFERS

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SUMMARY

Performing uterine palpation 35 days after calving can increase blood levels of prostaglandin in mature Brahman cows. The same treatment, when administered to first-calf heifers failed to stimulate an increase in blood levels of prostaglandin. This would indicate uterine palpation can be useful in assisting the mature cows return to estrous cyclicity.

INTRODUCTION

Previous studies accomplished at this facility have shown that injections of prostaglandin at or near 35 days after calving will decrease the interval from calving to first estrus. Additional information has shown that uterine palpation during this period will also shorten the interval from calving to estrus. Since prostaglandin is produced by the uterus, it was believed uterine palpation must be causing a release of prostaglandin. Another study was then undertaken to determine if uterine palpation was indeed causing a release of prostaglandin concentrations. Blood samples were taken for one hour before palpation and two hours after palpation. These samples were then analyzed for prostaglandin. It was discovered that uterine palpation did cause a release of prostaglandin. However, prostaglandin was still being released at the end of the two hour blood sampling period. These findings have now opened further questions.

OBJECTIVES

The reasons for conducting this study were to determine the length of the prostaglandin release and if first-calf heifers could respond to uterine palpation in the same manner as mature cows.

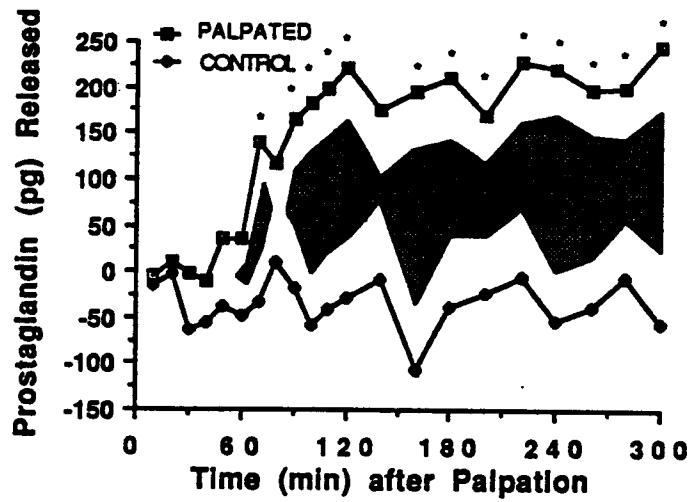
PROCEDURE

Thirteen mature Brahman cows and eleven first-calf heifers which had not experienced an estrous cycle since calving were used in this experiment. Five mature cows and six heifers were used as controls while eight mature cows and five heifers received two minutes of uterine palpation. On day 35 after calving, all cows and heifers were fitted with a jugular cannula for the removal of blood samples. Blood was drawn every 10 minutes for 30 minutes and then uterine palpation occurred. Blood collection continued at 10 minute intervals for 2 hours then at 20 minute intervals for an additional 3 hour period after uterine palpation. Blood was then analyzed in the laboratory for prostaglandin content. The average of the prostaglandin concentrations in the four samples taken before palpation was subtracted from the prostaglandin concentration in each blood sample taken after palpation. This indicated how much prostaglandin was released as a result of uterine palpation.

RESULTS

As soon as one hour after uterine palpation occurred in the mature cows, blood levels of prostaglandin began increasing. This prostaglandin release continued for the remainder of the five hours and was higher ($P < .05$) from 1 through 5 hours after palpation than in the control cows (Figure 1). The first-calf heifers, however did not respond to uterine palpation with a rise in blood levels of prostaglandin (Figure 2). At this point uterine palpation would seem to have no affect on first calf heifers, but could prove to be a very useful and inexpensive way to help mature cows breed back sooner after calving.

FIGURE 1
Mature Cow Prostaglandin Release



- 1) Shaded areas indicate regions where the standard errors of the two curves do not overlap.
- 2) Stars indicate Prostaglandin concentrations along the palpation curve which are different from the control curve ($p < .05$).

FIGURE 2
Heifer Prostaglandin Release

