

# Effect of veterinary student rectal palpation on early pregnancy loss in dairy cattle

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## Introduction

Rectal palpation is the most commonly used method for pregnancy determination in cattle. Surveys of bovine practitioners seeking to hire new graduates rank it as a skill they expect students to perform proficiently. Teaching this important technique to veterinary students is a challenge in an academic setting because of the perceived detrimental effect student palpation may have on a client's animals. Additionally, an inability by the instructor to guide a student's hand while rectally palpating makes verification of learning difficult. The goal of this study was to determine if student palpation led to an increase in pregnancy loss. We hypothesized that there would be no difference in pregnancy loss between cows that were palpated using transrectal ultrasonography by a clinician to cows that were ultrasounded by a clinician and then palpated by a fourth year veterinary student. Further, we hypothesized that students that had taken the elective formal palpation training class through The Ohio State University College of Veterinary Medicine (VETPREV 796.17: Bovine Palpation) would be more likely to cause early pregnancy loss in dairy cattle. The concern was that the advanced trained students may be more aggressive in their palpation technique.

## Materials and Methods

A total of 1,216 healthy female cattle from 2 commercial dairy farms were palpated using transrectal ultrasonography at approximately 37 days (mean 37 days, range 30 to 45 days) after artificial insemination (P1). Once a single embryo was confirmed by the clinician (all twins were omitted), the cattle were allocated into 2 groups based upon their ear tag number: 1) control group, odd numbered ear tag, (n=618), and 2) student palpated group (study group), even numbered ear tag, (n=598). Cattle in the control group were not subjected to any additional pregnancy diagnosis by the clinician or students. The study group was then immediately palpated by 1 4th year veterinary student.

All cattle were re-evaluated, by use of transrectal ultrasonography approximately 70 days after artificial insemination (P2), by a clinician. After this re-evaluation, the study was concluded. All animals that died or were sold before having a second check were omitted. In the analysis phase, students were further divided into 2 groups: 1) students that had formal palpation training via elective bovine palpation class (n=220 students), or 2) students that did not have formal palpation training (n=378 students).

## Results

A total of 53 (4.4%) animals lost their pregnancy between the first and second pregnancy checks. Twenty-seven (2.2%) were cows that were ultrasounded only by a clinician (control group), whereas 26 (2.1%) were cows that were ultrasounded by a clinician and then palpated by a 4th year veterinary student. There was no significant difference in pregnancy loss between the study group and the control group. Of the 26 cows documented to have had pregnancy loss within the study group, 20/378 (5.3%) were from students that had not taken the bovine palpation elective, and 6/220 (2.7%) were from students that had taken the bovine palpation elective.

## Significance

Fetal loss between 42 and 70 days has been previously reported to be 6%. In this study of 1216 animals, we realized a 4.4% pregnancy loss between P1 and P2. That there was no difference in pregnancy loss between the study group and the control group confirmed our hypothesis that student palpation had no detrimental effect on pregnancy. Furthermore, there was no difference noted between students that had formal palpation training to those that did not. These results challenge the idea that students new to palpation cause pregnancy loss while trying to learn the technique.