

# Effect of manual rupture of ovarian cysts on reproductive parameters in dairy cattle

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## Introduction

Ovarian cysts are common pathologic structures that interfere with reproduction in dairy cattle. Studies in the 1970's effectively used manual rupture to eliminate cysts without hormonal treatment in about 45% of cases. However, reports of ovarian injuries after manual rupture deters of its wide implementation. Hormonal protocols can achieve resolution in up to 70% to 80% of cases. The objective of this study was to determine if the combination of manual rupture and hormonal treatment can help improve resolution of cystic ovarian disease in dairy cattle, compared with that of hormonal treatment alone.

## Materials and Methods

This was a longitudinal study conducted under field conditions. Cows diagnosed with an ovarian cyst for the first time in a lactation were alternately assigned to either hormonal treatment with 100 µg gonadorelin diacetate tetrahydrate (2 ml Fertagyl®, Intervet Schering-Plough Animal Health) alone or in combination with manual rupture of the cyst. The hypothesis was that manual rupture would improve all reproductive parameters.

Parameters compared between groups included days to estrus as determined by pedometers (Afimilk, Israel), days to conception, number of inseminations after diagnosis of cystic ovarian disease until conception, and persistence of a cyst for more than four weeks. A one-sided student's *t*-test was used for all comparisons, and significance was set at  $P \leq 0.10$  due to small sample sizes.

## Results

Currently, 39 cows are enrolled in the hormonal treatment group and 33 cows in the hormone with manual rupture group. Manual rupture of the ovarian cyst significantly reduced days to return to estrus (mean  $\pm$  SD,  $19.5 \pm 14.5$  days vs  $25.6 \pm 20.7$  days;  $P = 0.08$ ). Cysts persisted for more than four weeks in three of 33 (9.1%) cows in the manual rupture group, and six of 39 (15.4%) cows in the control group ( $P = 0.49$ ). Young cows conceived faster following manual rupture than they did with hormonal treatment alone ( $38.7 \pm 26.3$  vs  $65.3 \pm 48.4$  days to conception,  $P = 0.09$ ). There was no statistical significant difference in other parameters; however, all results tended to numerically favor the manual rupture group.

## Significance

Results of this study suggest that manual rupture of ovarian cysts does not negatively impact reproduction under field conditions. Although manual rupture combined with hormonal treatment improved parameters that refer to resolution of the cyst, compared with those following hormonal treatment alone, it does not appear to improve time to conception in all cows, but only in young cows. Most parameters were numerically in favor of the group that had manual rupture of the cyst along with hormonal treatment. However, the small sample size inherent to studies of ovarian cysts (low prevalence) is likely a major factor for the lack of statistically significant differences.