

# Blood calcium as a prognostic indicator of left-displaced abomasum postsurgical correction success

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## Introduction

Subclinical hypocalcemia, a reduction in blood calcium concentrations without apparent clinical signs of milk fever, occurs in 25 to 50% of early-postpartum dairy cows. Compared to their normocalcemic counterparts, research has shown these cows are at an increased risk of additional early-lactation diseases, including left-displaced abomasum (LDA). However, no work has assessed the association of total calcium (tCa) concentration at the time of LDA correction on subsequent milk yield and survival within the herd. Pending future development of an economical and accurate on-farm test for hypocalcemia, the ability to assess LDA prognosis post-surgical correction based on pre-correction blood tCa concentration is of great interest to practitioners. Therefore, our objective was to determine the association of blood tCa concentration at the time of LDA surgical correction on milk yield and removal from herd in the 60 d post-correction.

## Materials and Methods

A total of 8 bovine practitioners, located within the northeastern United States, were involved in sample collection on 20 herds. Immediately following LDA diagnosis and prior to surgical correction, coccygeal vessel blood samples were collected from 150 dairy cows within the first 30 days-in-milk into non-anticoagulant (red top) vacutainer tubes. Serum was harvested within 12 h of collection and stored at -4°F (-20°C) until study completion. Samples will be shipped

on ice for tCa measurement at the New York State Animal Health Diagnostic Center (Cornell University, Ithaca, NY) using a Cobas 501 Chemistry Analyzer (Roche Diagnostics, Indianapolis, IN) with a 5-nitro-5'-methyl-BAPTA method according to manufacturer recommendations with daily calibration and controls. The association of tCa on milk yield and removal from herd in the first 60 d after LDA surgical correction will be analyzed using repeated measures ANOVA and Poisson regression, respectively, controlling for practitioner, herd, parity, and DIM at LDA surgical correction.

## Results

Due to unforeseen, global circumstances, tCa analysis has been delayed.

## Significance

We believe our findings will determine if tCa can serve as a prognostic indicator of LDA post-correction success. This understanding will allow for exploration into the potential effects of post-correction calcium supplementation on future production and herd longevity.