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Comparison of transcutaneous ultrasound over the right flank with transrectal ultrasonography in the diagnosis of pregnancy in New Zealand dairy herds

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Abstract:

Application of a 3.5 MHz sector transducer over the right flank allows the rapid and clear visualization of bovine pregnancy (i.e., fetus, fetal membranes, fetal fluid and/or placentomes). A total of 1736 cows in ten commercial, pasture-based New Zealand dairy herds were examined for pregnancy by transcortaneous ultrasound across the right flank and transrectal ultrasound between 37 and 198 days of gestation. The gold standard was derived from calving records or examination at slaughter. The overall sensitivity of transrectal ultrasound (96.24%) was markedly higher than flank ultrasound (58.55%) and the overall probability of a correct diagnosis of pregnancy status was also significantly higher (p<0.0001). From 155 days of gestation, however, flank ultrasound represented a more accurate method of pregnancy diagnosis and the probability of a correct diagnosis was significantly higher (p<0.0001) after this gestational age.

The gestational age of 225 cows from four Spring-calving dairy herds was determined and ultrasound pregnancy test recorded, to determine possible fetal characteristics able to be visualized via transcortaneous ultrasound over the right flank in order to age pregnancy during mid to late gestation. Linear or quadratic equations and curves were formulated from 60 to 198 days of gestation. The fetal characteristics of thoracic diameter, abdominal diameter or umbilical diameter can be used to age pregnancy from 60 days of gestation. Placentome height and length were not significant in the determination of gestational age.
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Table of contents:
Acknowledgements
Table of contents
List of tables and figures

Chapter 1:
LITERATURE REVIEW OF MID-GESTATION PREGNANCY TESTING IN CATTLLE

1.1 The Anatomy of Bovine Pregnancy

1.1.1 The non-pregnant cow

1.1.2 The pregnant cow

1.1.2.1 Early pregnancy (<3 months)

Fertilization and cleavage

Early embryonic development

Implantation and placentation

1.1.2.2 Mid pregnancy (3-6 months)

1.1.2.3 Late pregnancy (>6 months)

1.2 Currently Available Mid-Gestation Pregnancy Testing Techniques

1.2.1 Manual palpation per rectum

1.2.1.1 Early (<3 months)

1.2.1.2 Mid (3-6 months) and Late (>6 months)

1.2.1.3 Fetal ageing using manual palpation per rectum

1.2.2 Transrectal ultrasonography

1.2.2.1 Early (<3 months)

1.2.2.2 Mid (3-6 months) and Late (>6 months)

1.2.2.3 Fetal ageing using transrectal ultrasonography

1.2.3 The potential consequences of pregnancy diagnosis per rectum

1.2.3.1 Stress and Pain

1.2.3.2 Injury

1.2.4 Oestrone sulphate

1.2.5 Progesterone

1.2.6 Oestrus detection
1.2.7 Abdominal enlargement and right abdominal wall
1.2.8 Post-oestrus bleeding
1.2.9 Changes in udder size
1.2.10 Doppler/fetal echocardiography
1.2.11 Electrocardiography
1.2.12 Early pregnancy factor (EPF)
1.2.13 Bovine pregnancy specific protein B (bPSP-B) and bovine pregnancy associated glycoprotein (bPAG)
1.2.14 Transcutaneous flank ultrasound

1.3 Pregnancy testing and the herdowner
   1.3.1 The Northland/New Zealand dairy farm
   1.3.2 Spring and Autumn calving

1.4 Mid-gestation pregnancy testing and the veterinarian

1.5 Conclusion

Chapter 2:
DEVELOPMENT OF A TRANSCUTANEOUS ULTRASOUND METHOD OVER THE RIGHT FLANK TO DIAGNOSE PREGNANCY IN THE DAIRY COW
2.1 Scanner placement: the right flank
2.2 Transducer type: sector scanner
2.3 Transducer frequency: 3.5 MHz
2.4 Preparation of the animal and right flank
2.5 Current New Zealand holding facilities
   2.5.1 Vet/AI race
   2.5.2 Crush
   2.5.3 Walk-through dairy
   2.5.4 Herringbone dairy
   2.5.5 Rotary herringbone
   2.5.6 Rotary Turnstyle
2.6 Preliminary images derived from transcutaneous scans over right flank
   2.6.1 The non-pregnant cow
   2.6.2 The pregnant cow
2.7 Conclusion
Chapter 3:
COMPARISON OF TRANSCUTANEOUS FLANK ULTRASOUND WITH RECTAL ULTRASOUND FOR PREGNANCY DIAGNOSIS IN THE DAIRY COW

3.1 Introduction

3.2 Materials and Methods
   3.2.1 Real-time B-mode transrectal ultrasonography
   3.2.2 Manual palpation *per rectum*
   3.2.3 Real-time transcutaneous flank ultrasonography
      3.2.3.1 Plank
      3.2.3.2 Pit
      3.2.3.3 Vet/AI race
   3.2.4 Gold standard
   3.2.5 Calculation of conception dates
   3.2.6 Comparison and statistics

3.3 Results
   3.3.1 Numbers examined and derivation of gold standard
   3.3.2 Sensitivity, specificity and positive and negative predictive values
      3.3.2.1 Overall results
   3.3.3 Results by:
      3.3.3.1 Gestational age at pregnancy diagnosis (days)
      3.3.3.2 Probability curves
      3.3.3.3 Herd
      3.3.3.4 Method of diagnosis (flank)
      3.3.3.5 Cow breeds
      3.3.3.6 Cow age
      3.3.3.7 Sire breed
      3.3.3.8 Calf sex
      3.3.3.9 Comparison of veterinarians

3.4 Discussion

3.5 Conclusion
Chapter 4:
MEASUREMENT OF FETAL CHARACTERISTICS IN ORDER TO DETERMINE THE LENGTH OF GESTATION AT DATE OF PREGNANCY DIAGNOSIS BY TRANSCUTANEOUS ULTRASOUND OVER THE RIGHT FLANK

4.1 Introduction
4.2 Materials and Methods
   4.2.1 Pregnancy diagnosis
   4.2.2 Estimation of fetal age
   4.2.3 Statistical analysis
4.3 Results
   4.3.1 Thoracic diameter
   4.3.2 Abdominal diameter
   4.3.3 Umbilical diameter
   4.3.4 Placentome height
   4.3.5 Placentome length
4.4 Discussion
4.5 Conclusion

REFERENCES
List of tables and figures:

Table 1.1  Approximate size and “rule of thumb” measurement using the average hand for amniotic size according to gestational age

Table 3.1  Herd size and the date of the start of artificial insemination and natural mating and end of natural mating relative to the date of pregnancy diagnosis

Table 3.2  Number of cows culled and retained on-farm with results of each herd

Table 3.3  Derivation of pregnant and non-pregnant cow gold standard

Table 3.4  Comparison of results for pregnant and non-pregnant cows

Table 3.5  Values for correct pregnant (a), incorrect pregnant (b), correct non-pregnant (c), incorrect non-pregnant (d), sensitivity, specificity, and positive (PPV) and negative (NPV) predictive values for the two methods

Table 3.6  Values for a, b, c, d, sensitivity, specificity, positive (PPV) and negative (NPV) predictive values for each gestational stage

Figure 1.1  Dorsal view of a cow’s uterus, partially dissected

Figure 1.2  Lateral view of the genitalia and udder of a cow

Figure 1.3  Early embryonic development within the bovine oviduct

Figure 1.4  Hatching of the blastocyst

Figure 1.5  Bovine fetus and placenta

Figure 1.6  Growth curve and development stages of the cow

Figure 1.7:  Right lateral view demonstrating the position of the gravid uterus: at 5 months the uterus is out of reach via manual palpation per rectum

Figure 1.8  Left lateral view demonstrating the position of the gravid uterus: Manual palpation per rectum of a “late” pregnancy

Figure 1.9  A transrectal ultrasound image of a fetus at 65 days of gestation showing the heart, rumen, ribs and a placentome

Figure 2.1  The surface anatomy of the bovine right flank. The transducer is placed underneath the right flank fold

Figure 2.2  Topography of the nerves to the flank

Figure 2.3  Scanner placement for the visualization of early and late pregnancies

Figure 2.4  Topography of the abdominal viscera in the non-pregnant cow

Figure 2.5  Ventral views of the abdominal viscera of a newborn calf, a non-pregnant cow and a heavily pregnant cow

Figure 2.6  Right lateral and transverse view of the gravid and non-gravid horn in mid to late pregnancy

Figure 2.7  Linear and sector transducers

Figure 2.8  Cows held in an Al/vet race allowing easy access to the right flank

Figure 2.9  A crush with head bale and side gate access

Figure 2.10  Movement of the bottom side gate allows access to the right flank in a crush

Figure 2.11  A simple high-line, swing-over Herringbone dairy
Figure 2.12: Access to the right flank at pit level in the left side of a Herringbone shed
Figure 2.13: Direction of cow movement and accessibility to the right flank of each animal in a Rotary Herringbone dairy
Figure 2.14: Cow position on a Rotary Herringbone shed
Figure 2.15: Rotary Turnstyle dairy
Figure 2.16: Demonstrating the difficulty in gaining access to the right flank due to intervening pipework of the bail dummy and kick rail in the turnstyle rotary shed and the area available for cow movement within the bale
Figure 2.17: Small intestinal loops filling the right caudoventral abdomen in a non-pregnant cow
Figure 2.18: A lateral and craniocaudal view of a fetal abdomen and thorax with anechoic ruminal compartments, acoustic shadowing from the ribs, the hyperechoic reticulum and granular intestinal mass
Figure 2.19: Fetal forelimbs and cranial thorax at 104 days of gestation
Figure 2.20: Lateral view of fetal tail vertebrae at 111 days of gestation illustrating the relatively fine detail achievable by transcutaneous scanning.
Figure 2.21: Two views of the fetal heart chambers, pericardium and ribs at 139 days and 95 days of gestation
Figure 2.22: Placentomes and a placental anastomosis of a twin pregnancy at 106 days of gestation.
Figure 2.23: Longitudinal and cross-sectional images of an umbilical cord and fetal membranes

Figure 3.1: Application of the transcutaneous flank technique to diagnose pregnancy in the left side of a Herring-bone shed.
Figure 3.2: Sensitivity of transrectal and flank ultrasound according to age at pregnancy diagnosis (days)
Figure 3.3: Specificity of transrectal and flank ultrasound according to age at pregnancy diagnosis (days)
Figure 3.4: Probability curve of a correct diagnosis using transcutaneous flank ultrasound (p) according to gestational age at pregnancy diagnosis (days)
Figure 3.8: Probability of a correct diagnosis using rectal ultrasound (p) according to gestational age at pregnancy diagnosis (days)

Figure 4.1: The number and frequency scanned by transcutaneous ultrasound for fetal ageing
Figure 4.2: Principal fetal and placental measurements
Figure 4.3: The number and relative accessibility of each measurement relative to the total number of animals available
Figure 4.4: Thoracic diameter at 89 days of gestation and 107 days of gestation
Figure 4.5: Thoracic diameter at 127 days of gestation and 153 days of gestation
Figure 4.6: The significance of possible effects on fetal thoracic diameter
Figure 4.7  Foetal age estimation curve: Thoracic diameter according to gestational age at pregnancy diagnosis (days)
Figure 4.8  Abdominal diameter at 57 days and 118 days of gestation
Figure 4.9  Abdominal diameter at 131 days and 151 days of gestation
Figure 4.10 Abdominal diameter at 183 days of gestation
Figure 4.11 The significance of possible effects on fetal abdominal diameter
Figure 4.12 The significance of each cow and bull breed on fetal abdominal diameter
Figure 4.13 Fetal age estimation curve: Abdominal diameter according to gestational age at pregnancy diagnosis (days)
Figure 4.14 Umbilical diameter at 89 days of gestation and 118 days of gestation
Figure 4.15 Umbilical diameter at 137 days of gestation and 146 days of gestation
Figure 4.16 Umbilical diameter at 192 days of gestation
Figure 4.17 The significance of possible effects on fetal umbilical diameter
Figure 4.18 Fetal age estimation curve. Umbilical diameter according to gestational age at pregnancy diagnosis (days)
Figure 4.19 Similar sized placentomes at 124 days of gestation and 89 days of gestation
Figure 4.20 The significance of possible effects on placentome height
Figure 4.21 Relative frequencies at which various parts of the fetal body were accessible for transrectal ultrasound in relation to month of gestation
Figure 4.22 Regression of uterine and umbilical blood flows on day of gestation
Figure 4.23 Mean diameter and thickness (mm) of placentomes surrounding in vivo embryos and fetuses from Day 37 to Day 93 of pregnancy