

Madison Ricard: Unravelling the umbilical cord, literally!

BY CHRIS GOULD / CWHBA

PHOTOGRAPHY: LINDA FINSTAD, DR. MADISON RICARD DVM

Long-time Canadian Warmblood member, volunteer, and competitive rider Madison Ricard graduated from the University of Calgary School of Veterinary Medicine in 2020. She subsequently became a veterinary anatomic pathology resident at the Western College of Veterinary Medicine in Saskatoon, SK.

There she heads a study relating umbilical cord length and twists to foal health. This article explains why and how she is recruiting worldwide breeder participation.

While a full time student in Calgary, Madison competed her Canadian Warmblood, Donndiego (Donner Bube x Zodiak), up to 1m35. They won the 2016 Level 2 Jumper CWHBA award and also the Jump Alberta 1m20 Jumper Year End Award in 2016 and 2017.

Unravelling the umbilical cord

Does cord's length and twists affect foal health? [By Myrna MacDonald]

Western College of Veterinary Medicine (WCVM) researchers have added a couple of new 'twists' to research

focusing on the link between equine umbilical cords and foal health.

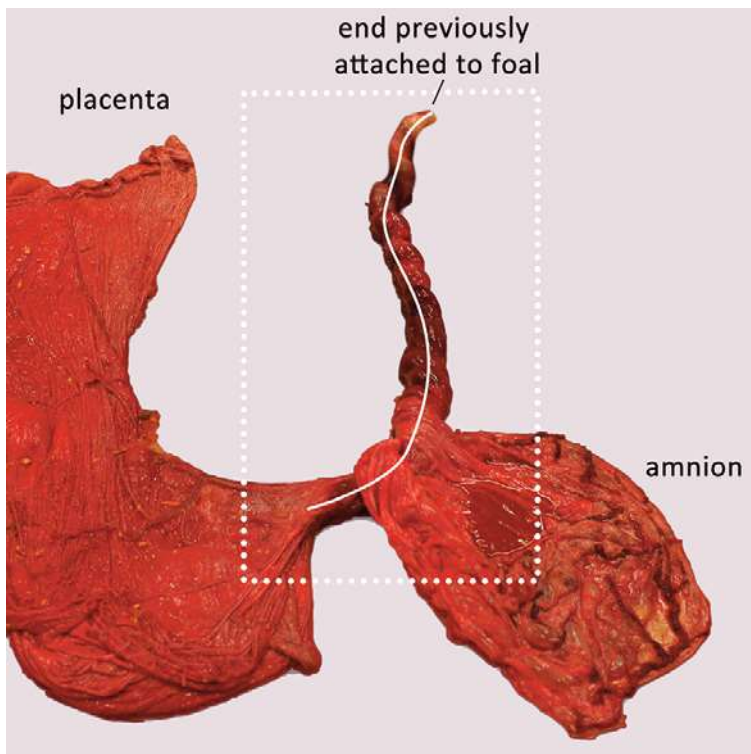
Veterinary anatomic pathology resident Dr. Madison Ricard and her supervisor, Dr. Bruce Wobeser, are investigating whether excessively long umbilical cords or cords with more twists than usual affect the health outcomes of foals.

Previous studies have investigated the link between umbilical cord length and equine abortions, but this study is the first of its kind: "As far as we can tell, nobody has looked at that situation before on live foals. It's always been on aborted foals," says Wobeser.

The researchers are also relying on social media to find participants and online surveys and cell phone images to gather information. Ricard, who develops websites and has

an interest in social media, has been sharing the study's details through horse breeding groups online. "It is outside the norm," says Wobeser. "But really, social media data collection is just survey data. We're surveying a different group of people with different tools. It's absolutely worth trying."

The WCVM researchers are encouraging owners to enrol their pregnant mares in the study, which includes a few steps outlined on their website (wcvm-equs.ca). Immediately after foaling, the owner takes a photo of the umbilical cord and measures its length. Next, the owner records information about the mare, the foaling process, and the foal's health at birth. These details can be submitted online or by using a printable, stall-side form. The owner also fills out surveys about the foal's health – one at seven days and another at 30 days after birth. "If there's anything unusual about the foal's health, that's what we want to capture," says Ricard, who plans to sort information into categories such as infectious versus non-infectious conditions, and congenital issues versus bacterial or viral infections. "From there, we can do our statistics, home in on those categories, and



This photo illustration demonstrates the ideal set up for taking images of the umbilical cord and placenta after a foaling



CWHBA Donndiego (2004: Donner Bube x Zodiak), bred by Cynthia Adams, ridden and owned by Madison Ricard

then see the outcomes we find.”

Normally, equine umbilical cords measure 50 to 60 centimetres (20 to 24 inches) long and have four or five twists along its length. But excessively long or twisted cords can restrict blood supply to the fetus and cause significant health issues – often leading to death.

In an earlier study, Ricard and Wobeser reported that Canada has a higher rate of non-infectious fetal placental causes – including excessively long umbilical cords or torsions. Those results are similar to a study targeting horses in the United Kingdom.

Human medical researchers have also found that too much twisting or excessively long umbilical cords can affect babies’ Apgar scores – the scoring system used to assess newborns’ well-being. Scientists have found links between these abnormal umbilical cords and issues such as still births, pulmonary hypertension, and neurologic function deficits in babies. “Although it’s human medicine, it suggests that there’s the potential for something to be there when it comes to umbilical cord

morphology (form and structure) in these foals,” says Ricard.

With the foaling data, Ricard hopes to identify common patterns in the cords’ traits. For each submission, she will also calculate an ‘umbilical cord index’ – the number of twists in the cord divided by the cord’s length. Ricard will then compare those index numbers to established reference values. “Once it’s all done, we’re going to take all of this information that we’ve gathered about umbilical cords and see if we can find any connections between the umbilical cord data and the foals’ health data,” says Ricard.

But first, the WCVN researchers need data from many foalings over the next two years. They hope to capture data from breeding seasons in both northern and southern hemispheres. Public response has been very positive, and Ricard says many Facebook users have shared her original post. “If we could get [access to] 500 foals, that would be amazing,” says Ricard. ■

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Do you have a mare that's scheduled to foal this year? Visit wcvn-equs.ca for more details about this study or contact:

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