Managing Retained Fetal Membranes
Noelia Silva-del-Rio, CE Dairy Specialist, VMTRC, Tulare, CA

The placenta is an organ that facilitates the metabolic exchange between fetus and dam. The button like structures of the placenta (fetal cotyledons) connect with the caruncles of the uterus. It is through these unions (placentomas) that nutrients are transferred from the mother to the calf. After a normal calving, the fetal membranes will be expelled within 30 minutes to 8 hours. If the fetal membranes have not been released after 12 to 24 hours, the cow will have a condition known as retained fetal membranes (RFM).

Retained fetal membranes by itself is not a problem, however it may lead to uterine contamination and metritis. For example, when the cow lies down, the placenta hangs further out of her body and touches dirty stalls and corrals loaded with bacteria. When the cow stands and walks, the contaminated tissue is pulled back into the uterus. A cow with RFM is 5 to 7 times more likely to have metritis, and her pregnancy rate decreases by approximately 15%. Furthermore, cows with RFM are more susceptible to suffer ketosis, displaced abomasums, and early culling. The cost of each RFM case is estimated at over $300.

Overall, the incidence of RFM is 8%; however, it ranges from 3 to 40% across herds. If *your herd has an incidence of RFM above 10%, you should be looking closely into this problem.* On the other hand, if the incidence of RFM is too low, you should evaluate if postpartum checks and/or record keeping are being properly done.

Several factors have been associated with increased risk of RFM. The most important are listed below:

- **Mechanical factors:** difficult births (especially in heifers), twins, stillborn calves, abortions.
- **Nutritional factors:** mineral and vitamin deficiencies, clinical and subclinical hypocalcemia.
- **Management factors:** stress, obesity, induction of calving with PGF2α, unnecessary calving assistance.
- **Infectious diseases:** brucellosis, leptospirosis, vibriosis, listeriosis, infectious bovine rhinotracheitis (IBR), bovine virus diarrhea (BVD).

After a normal calving, the cow’s immune system recognizes the fetal cotyledons as foreign bodies and attacks them. The unions between cotyledons and caruncles are destroyed and the fetal membranes are expelled. However, when the immune system is weakened, it fails to degrade those unions and RFM occurs. There are several factors that will ensure a good immune response and must be taken into consideration to prevent RFM:

- **Calcium blood levels:** Cows suffering from clinical and subclinical hypocalcemia have shown an impaired neutrophil function. These immune cells have a role in recognizing the placenta as a foreign body and expelling it. To prevent hypocalcemia, anionic salts and low potassium alfalfa are strategies that could be used to balance dry cow diets for dietary cation-anion difference (DCAD).
- **Dietary minerals and vitamins:** Deficiencies of selenium, vitamin A or vitamin E can suppress neutrophil and macrophage function during the early postpartum period. The dry
cow ration should be properly balanced, and vitamins and minerals (added in the ration in minute quantities) must be uniformly incorporated in the TMR.

- **Body condition score**: Changes in body condition score should be minimized. During prolonged dry periods, cows are at risk of gaining excessive body weight, so energy intake should be monitored. On the other hand, during the close-up period, the drop in intake may result in unwanted weight loss. Easy access to fresh, palatable food is imperative.

- **Forage quality**: Forages contaminated with molds and mycotoxins may impair the cow’s immune response. Spoiled silage should be discarded and never fed to dry cows. During summer time, close-up cows should be fed at least twice per day to prevent TMR heating at the feedbunk.

- **Stress**: Stressful situations should be avoided during the close-up period such as pen movements, diet changes, noise and overcrowding. It is critical to provide a quiet environment during calving and intervene only when clearly necessary.

Treating cows immediately after calving with oxytocin, prostaglandin or calcium has shown poor results on RFM prevention. Manual removal of the fetal membranes is not advised. Postpartum, the uterine walls are thin and fragile, and manipulation of the uterus may cause harm and favor bacterial invasion. Trimming out the fetal membranes may decrease contamination of the fetal membranes, but the pulling force of the fetal membranes’ weight will be lost. Once the cow has RFM, there is something very important that dairy producers still can do – **prevent metritis**. It is critical to ensure minimal bacterial exposure of the fetal membranes and the uterus by providing cows with clean and comfortable bedding (Fig 1).

![Fig 1. Clean bedding is necessary to prevent metritis.](image)

During fresh cow checks, cows with RFM should be examined daily for appetite, hydration and temperature. Cows with RFM are more likely to suffer metritis as well as ketosis and displaced abomasum. Toxic metritis cases may require urgent antibiotic treatment and rehydration. Therefore, if the cow is sick, seek advice from your veterinarian on how to conduct a systematic examination and to establish treatment protocols. **But, remember, if she is not sick - do not treat. Cows with RFM normally drop the fetal membranes within a week.**