Retained fetal membranes in mares: alternative treatment

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Clinical Relevance
By using simple tools that are available to the equine practitioner, retained fetal membranes can easily and safely be removed!

Introduction
• Definition retained fetal membranes: mares does not expell the mebranes within 3 hrs.
• Treatment options retained fetal membranes:
  ‒ Repeted Oxytocin injections (10-20 IU) every 1-2 hrs
  ‒ Infusion 1-1.5 IU Oxytocin/minute (in 1000 ml Saline)
  ‒ Manual removal ("twisting")
  ‒ Repeated lavage
  ‒ Ca borocluconate infusion
  ‒ Burns Technique

Introduction
• 2006: Belgian Draft Horse retained fetal membranes > 6 hours, did not respond to initial oxytocin injections
• Allergy/shoulder complaints "Burns-technique"

Introduction
• 2007-2015: 163 mares with retained fetal membranes > 3 hrs (majority > 6 hrs)
• Mares did not respond to the initial oxytocin therapy

163 broodmares 2007-2015
• Dutch Warmblood (KWPN): 47%
• Friesian: 32%
  ‒ In this breed retained fetal membranes reported up to > 50%
• Rest (mixed breeds and ponies): 21%
Procedure

- 10-20 IU Oxytocin
- Foal nasal tube or stallion catheter
- Hose connector with flow control valve
- Water hose or pump
- Low pressure water infusion via umbilicus

Hose connector + valve

Tube connected to the water hose

Tube placement in the umbilical vessel

Tube placement in the umbilical vessel
Procedure

Manual fixation of the tube in the umbilical bloodvessel. Controlling the waterflow, depending on mare’s physical reaction.

Results

• 91.4% (149/163) expelled the membranes within 5-10 minutes
• Most mares tolerated the procedure well
  • Water pressure reduced to improve comfort
• No secondary side effects were seen
• Majority needed no additional therapy (e.g. lavage or antibiotics)

Results 2

• Procedure “failure” in 12 mares
• Unknown duration of retained fetal membranes
• Abortions and dystocia
• Torn membranes

Experiment

• Normal, fresh placenta (< 1 hr.)
• Infused water or NaCl 0.9% via tube
• Tissue samples
  – T= 0 minutes, T= 2 minutes and T= 5 minutes
• Histology
Experiment - results

Histological changes 1

Histological changes 2

What enhances the placental separation?
• Edema in the placental tissue
• Stretching of the placental villi
• Increase in weight
• Degeneration of the epithelial cells is the key factor!!

Conclusion
• Many advantages compared to the classical manual removal:
  – No micro-retention
  – No secondary side effects (e.g. inverted uterine horn)
  – No additional therapy required
  – Reduced use of antibiotics
  – Safe for the mare and veterinarian

Take home message
• Umbilical vessel infusion is a safe, well accepted and easy to perform method to treat retained fetal membranes in mares: try this at home!
Questions?

• Watch video at:
  https://www.youtube.com/watch?v=mfR-MTg5ng