

## Popular Article

# 'Red Bag' Delivery or Placenta Previa: An Emergency in Mares

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### Abstract

Mares have an active and fast labor process where the foal is born within 30 minutes from the start of active labor. Any complications during foaling can result in loss of foal, if timely assistance is not provided. One such foaling emergency condition is 'red bag' delivery or placenta previa in which premature placental separation of chorioallantois results in protrusion of intact fluid-filled red velvety-looking chorioallantois through vulva of mare (the characteristic dark red color of placenta gives the condition its name). Failure of chorioallantois to rupture and its subsequent separation from uterus results in hypoxia to fetus leading to a life-threatening emergency. The condition, though rare can be managed through timely intervention during foaling.

### Introduction

Mares have diffused type placenta; the entire surface of the outer placental membrane (allanto-chorion) is covered with villi and microvilli that penetrate into the crypts of endometrium and the inner placental membrane (amnion) which surrounds the foal. The entire endometrium and chorion take part in the placentation via micro-cotyledons except at the region of the internal os of the cervix. As a result, the surface of outer chorion having micro-cotyledons has a 'red velvety' appearance but the placental surface appears 'smooth white' at the cervix internal os region. The latter is known as cervical star. This diffused placental bed helps in exchange of nutrients and gases between the dam and fetus.

Equine births are accomplished in shortest labor duration when compared with other domestic species. Normally, the first stage of labor lasts 1-4 hour in which the cervix begins to relax and the uterine contractions increase in frequency and intensity. It is characterized by signs of abdominal discomfort and restlessness. Patches of sweat appear behind the elbows and on flank. The fetus rotates from a dorsopubic to a dorsosacral position inside the birth canal before expulsion. Increasing contractions of the uterus causes protrusion of the chorioallantois through internal-os of cervix.



In eutocia, chorioallantois ruptures at the cervical star leading to release of large amount of allantoic fluid (tea-colored) that lubricates the birth canal to facilitate birth. This is followed by second stage of labor which lasts 15–30 minutes. The amnion (white fluid filled membrane) containing the fetus protrudes from the vulva and strong contractions (uterine and abdominal) result in the expulsion of fetus. The third stage involves expulsion of fetal membranes (within 3 hours of foaling).

Occasionally, an emergency situation arises during foaling due to change in the series of events occurring during labor process. One such condition that occurs (though rarely) is ‘red-bag’ delivery or placenta previa in which premature separation of outer placental membrane from the uterine wall (chorioallantois) leads to protrusion of intact fluid-filled red velvety-looking chorioallantois through vulva while fetus lies within the amnion. This characteristic dark red color of the outer surface of chorioallantois gives rise to this common term for premature placental separation – “red bag”.

### “Red-bag delivery”: why an emergency?

It is uncommon and accounts for 5-10% of all causes of abortion, perinatal death or stillbirth in equine. In this condition, the outer placental membranes (chorioallantois) fail to rupture during labor and there is subsequent separation of attachments between uterus and placenta leading to rapid hypoxia (decrease in oxygen transport) to the fetus as the placenta is foal’s only life support in-utero. As a result, the fetus may die of asphyxiation if immediate intervention is delayed.



a) Normal foaling with amnion containing the fetus



b) ‘Red bag’ delivery (appearance of cervical star)

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that influence abnormal detachment of placenta include: a) Placentitis due to bacterial or viral infections; b) Extended labor duration with dystocia and dead foal; c) Fescue toxicity resulting from digestion of grass infested with an endophytic fungus, *Acremonium coenophialu* (Cross, 2011); d) stress

**Diagnosis:** Premature placental separation can be possibly diagnosed by ultrasound examination of gravid uterus. In case of chronic condition, mild blood loss or cervical discharge may be noticed from vulva. Confirmation of this condition during foaling can be made by observing the cervical star



located on the chorionic surface.

**Management:** Vigilance during foaling is necessary. If a mare is in second stage of labor and there is protrusion of red-velvety placenta instead of the greyish-white amnion, this should be considered as an emergency (red-bag delivery). Recognition of condition and timely intervention are the key factors to manage this condition. Veterinary assistance should be called with immediate delivery of foal. The procedure involves immediate opening of chorioallantois (red-bag) with knife or scissors which results in release of large quantity of allantoic fluid. The foal in the amnion should be located and delivery by necessary obstetrical procedures. Foal should be administered oxygen, if available as this condition results in hypoxia.

In conclusion, 'red-bag' delivery should be treated as an extreme emergency with vigilance and immediate intervention to save the life of foal. Necessary care of the pregnant mare should be taken during gestation to avoid this complication by keeping the causes in check.

## References

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