RED BAG – A Foaling Emergency

Patrick M. McCue
DVM, PhD, Diplomate American College of Theriogenologists

The equine placenta consists of an outer membrane called the chorioallantois, that is attached to the uterus and an inner membrane called the amnion, which surrounds the foal. The chorioallantois is connected to the uterine wall by millions of microscopic 'velcro-like' attachments called microcotyledons, except for the area of the placenta that is in contact with the cervix. Absence of uterine glands on the cervix leads to a failure of microcotyledon development on the adjacent part of the placenta. Consequently, whereas a majority of the outer chorionic surface of the placenta has a brick-red velvety appearance due to the presence of the microcotyledons, the region of placenta abutting the cervix lacks microcotyledons and has a smooth white appearance. This area is known as the cervical star. Attachment of the placenta to the uterus via the microcotyledons is critical for the transfer of nutrients and oxygen from the mare across the placenta to the fetus.

With the onset of labor, the cervix starts to relax and the uterus begins to contract. Increased pressure from the uterus causes the chorioallantois to bulge into the open cervix. In the normal progression of foaling, the chorioallantois ruptures at the cervical star and results in the release of a large quantity of allantoic fluid (i.e. the "water breaks"). A thin, transparent, greyish-white membrane, the amnion, should begin protruding through the vulva within 5 to 10 minutes after the mare breaks her water. As the mare continues to push, front legs and then a nose should appear inside the amnionic sac. The foal is usually delivered within 15 to 30 minutes after the mare breaks her water.

Occasionally, a different series of events occurs during the labor process. Premature separation of the outer placental membrane from the uterine wall may lead to protrusion of the intact fluid-filled chorioallantois through the vulva. The dark red color of the outer surface of the chorioallantois gives rise to common term for premature separation of the placenta – "redbag". Confirmation of the condition may be made by observing the cervical star on the chorionic surface.

Failure of the outer placental membrane to rupture during labor and the subsequent separation of the attachments between the uterus and placenta lead to a rapid decrease in oxygen transport to the fetus. As a consequence, the fetus may suffer from lack of oxygen (hypoxia) or may die of asphyxiation if the condition is prolonged or progresses.

Owners or foaling personnel must quickly recognize the red bag condition and intervene immediately. The placental membrane should immediately be opened

with a sharp instrument such as a knife or scissors. This will result in a release of allantoic fluid and a transient delay in uterine contractions. Veterinary assistance should be summoned and the foal delivered as soon as possible. Oxygen should be administered to the newborn foal if available. Foals may develop problems associated with hypoxia even though they may appear to be normal at birth.

Premature separation of the placenta accounts for up to 5 to 10% of all cases of abortion, stillbirth and perinatal death. The most common causes of red bag are placental infections, fescue toxicity and stress. Chronic placental separation from the uterus may occur over a period of several days or weeks during late gestation as a consequence of placentitis. The condition may be associated with a cervical discharge or mild blood loss out the vulva. A diagnosis of placental separation may be possible by ultrasound examination of the pregnant uterus. Recognition of premature placental separation and appropriate intervention are the key factors for survival of the foal.

Amnion protruding through the vulva

Chorioallantoic membrane protruding through the vulva (Redbag)