**Case Report**

**Mega allantoic vesicles of the equine placenta**

K. Singh*, G. R. Holyoak, T. A. Snider, A. L. DeFrancisco and D. Schlafer

Illinois Veterinary Diagnostic Laboratory, 1221 Veterinary Basic Science Building, 2001 South Lincoln, Urbana, Illinois 61802, USA.

**Keywords:** horse; allantoic vesicle; chorionic pouch; endometrial cup; placenta

**Summary**

An ultrasound examination of a pregnant 12-year-old Palomino mare’s abdomen revealed multiple, variably sized, round, polypoid, cystic structures within the allantois. These cystic areas had clear hypoechoic centres and were surrounded by thin, irregular hyperechoic regions. The foaling was unremarkable. Grossly, the allantois was multifocally expanded by variably sized, 1–15 cm diameter, balloon-like allantoic vesicles containing clear watery or gelatinous fluid. Histological examination demonstrated marked separation of the allantoic surface from the chorionic surface by oedema fluid or gelatinous stroma. No other lesions were observed in the placenta. Similar lesions were observed in 2 other mares. No clinical complications were observed with the foals, fillies and mares after parturition. This is the first report of such large allantoic vesicles in the equine placenta.

**Introduction**

The placenta frequently contains normal structures that are easily misinterpreted as lesions with clinical significance. In the equine placenta these ‘nonlesions’ include hippocmanes or allantoic calculi, yolk sac remnants, endometrial cups, amniotic plaques, chorioallantoic or chorionic pouches and allantoic vesicles. Allantoic vesicles are small pedunculated invaginations of the allantoic membrane, frequently located along the course of umbilical vesicles (Schlafer 1996). Allantoic vesicles are generally small measuring a few millimetres to centimetres and do not carry any clinical significance. Not much has been reported about allantoic vesicles. Here we report 3 cases of mega allantoic vesicles in mares.

**Clinical findings**

A 12-year-old, pregnant Palomino mare was brought to the teaching hospital for routine abdominal ultrasound examination. The ultrasound examination of the abdomen revealed multiple, variably-sized, round, polypoid, cystic structures within the allantois. These cystic areas had clear hypoechoic centres surrounded by thin, irregular hyperechoic regions (Fig 1). The foaling was unremarkable. Grossly, the allantois was multifocally expanded by variably-sized, 1–15 cm in diameter, pockets of allantoic vesicles containing clear watery, thin fluid of low viscosity (Fig 2). Discrete round and dark red hyperaemic regions were present in the corresponding region on the chorion. Histological examination

---

*Author to whom correspondence should be addressed.*
demonstrated marked expansion, and regional complete separation, of the chorioallantois by oedema fluid (Fig 3). The blood vessels were dilated and congested. Occasionally, the trophoblast contained intracytoplasmic haemosiderin globules, and light brown-yellow pigment. Rare foci of mineralisation were also present. No other lesions were observed in the placenta. The foal and mare remained healthy 3 years after foaling. We have observed similar structures in the placentae of 2 other mares.

**Discussion**

Allantoic vesicles are rare structures and when present they are small. The pathogenesis of these lesions is not known. Multifocal aggregation of these vesicles with subchorionic pockets of oedema content suggests a local vascular anomaly, mesenchymal dysplasia or abnormal/ incomplete embryonic fusion of the 2 layers of allantois and chorion. Placental mesenchymal dysplasia in man is a vascular anomaly of unknown aetiology characterised by the formation of grape-like vesicles on the chorionic layer. The vascular lesions include fibromuscular hyperplasia with fibrinoid necrosis and thrombosis of vessels on the chorionic layer with gelatinous Alcian blue positive acid mucopolysaccharide material in the subchorionic layer (Parveen et al. 2007). The vesicles in our case were located on the allantois rather than the chorionic layer and no histological lesions were observed in the blood vessels and mesenchyme. If a vascular or mesenchymal anomaly is present, it probably exists at ultrastructural level.

The clinical significance of these lesions is not known but their presence is presumed to be clinically inconsequential. However, if the size is large as in this case, these structures might cause secondary complications such as dystocia, entrapment of umbilical cord, and decreased fetal space. The differentials for this lesion include acute localised placentitis, cysts and chorioallantoic pouches. On ultrasound examination localised subchorionic haematomas and cystic adenomatous hyperplasia should also be considered. Acute placentitis, as in the case of fescue toxicity, may appear grossly similar to allantoic vesicles. Fescue toxicity occurs due to ergot alkaloids produced by the endophyte Neotyphodium coenophialum and can cause diffuse placental thickening with hyperaemia and placentitis. Also, mares with fescue toxicosis may exhibit retained placenta, agalactia, abortion and prolonged parturition. Acute placentitis with marked sub chorionic oedema is also induced by Pseudomonas aeruginosa, which is histologically characterised by ulcerative and neutrophilic placentitis (Hong et al. 1993). Chorioallantoic or chorionic pouches are invaginations of the chorioallantoic membrane into the allantoic cavity overlying the endometrial cup and contain dark, friable, endometrial cup debris.

**Acknowledgement**

We appreciate the help of Ms Elaine Estes and Ms Betty Handlin in preparing the images.

**References**

