Case # WFU-1

Signalment: Young adult female domesticated primate.

History: Sudden onset of vaginal bleeding.

Gross findings: Surgical biopsy. On ultrasound examination the uterine lumen was enlarged by an ovoid, variably echogenic, 6 cm diameter, expansile mass, extending to the endometrial/myometrial junction.
Case # WFU-1

Signalment: Young adult female domesticated primate (Homo sapiens)

History: Sudden onset of vaginal bleeding.

Gross findings: Surgical biopsy. On ultrasound examination the uterine lumen was enlarged by a large, variably echogenic, expansile mass, extending to the endometrial/myometrial junction.

Microscopic Findings: Two sections consist of edematous placental villi surrounded by hemorrhage, fibrin, necrotic tissue, and loose connective tissue. The villi are lined by a simple cuboidal to multinucleated syncitial epithelium (cytotrophoblast and syncitiotrophoblast), with a core consisting of loose connective tissue. Scattered clustered and individual trophoblastic cells are also present within the adjacent tissue; these cells are polygonal, rounded, or columnar and have abundant pale eosinophilic cytoplasm. The uninucleate cells have variably sized, often large, round/oval nuclei with coarsely clumped chromatin. Syncitial cells have up to ~30 small hyperchromatic nuclei per cell.

Elsewhere in the section there are sheets of large, pale, round to fusiform cells with abundant clear to pale eosinophilic cytoplasm, medium-sized, round, vesicular nuclei, and 1-3 small punctate nucleoli (decidualized endometrial stromal cells); these cells are often separated by a pale eosinophilic background matrix, and surround necrotic blood vessels.

Focally the necrotic tissue is infiltrated by neutrophils.

Diagnosis: Hydatidiform mole, with necrosis, hemorrhage, endometritis, and endometrial stromal decidual change.
Discussion: This is an example of a complete hydatidiform mole, in a human patient. These lesions occur in approximately 1:2000 pregnancies in the US. This lesion was diploid and had two sets of paternal chromosomes, as is most common for this lesion. CHM is thought to arise from fertilization of an egg lacking maternal chromosomes, with subsequent duplication of paternal chromosomes and the formation of placental elements but no fetus. It is diagnosed by the presence of a large-for-gestational-age uterus, a “grape cluster” or “snowstorm” morphology on ultrasound, and markedly elevated human chorionic gonadotropin. CHM is usually a benign disorder resulting in apparent pregnancy loss and is treatable by surgical excision/evacuation. The disease may persist or recur, and may progress to choriocarcinoma in ~5% of cases (Clement and Young, 2008; Seckl et al., 2010).

Hydatidiform moles have been reported rarely in cattle, but have not been described in any other species. Cases reported in cattle have all been associated with twinning (Gopal et al., 19890; Meinecke et al., 2003; Morris et al., 2008), whereas HM associated with a twin is only seen in <1:20,000 pregnancies.

Tissue from hydatidiform moles will survive as xenografts in nude mice but is not tumorigenic, in contrast to choriocarcinoma tissue which rapidly progresses to fatal disease (Kato et al., 1982). Attempts to elicit HM by surgical removal of the embryo in rhesus monkeys were not successful, although the edematous stroma of the remaining placental villi was structurally reminiscent of HM (Lewis and Hertz, 1966).

References:


