Clinical Commentary

Mammary gland enlargement in the mare

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In the preceding paper, Spadari et al. (2008) present a thorough discussion of a very rare cause of mammary gland enlargement in the mare: mammary neoplasia.

The incidence of mammary gland abnormalities, such as mastitis, is lower in the mare than other domestic mammals (McCue 1993; Albrecht 2007). The smaller capacity, less pendulous nature and more protected location contribute to reduced pathology. Many conditions and diseases of the mammary gland cause swelling and enlargement of the gland (Spensley 2002). Enlargement may involve one or more of the glands of the udder. However, as described in the preceding paper, the enlarged mammary gland is not necessarily inflamed.

Evaluation of the mare with an enlarged mammary gland should include the medical, reproductive as well as geographic histories. The animal should be given a complete physical examination, with emphasis on the affected mammary gland. Examination of the gland should minimally include observation, palpation and expression of its contents. If abnormalities are noted from the basic examination, additional diagnostics including cytological and bacteriological examination of the fluids harvested should be performed. As described by Spadari et al. (2008), ultrasonographic examination of the mammary gland is an adjunct diagnostic modality that provides excellent visualisation of the glandular parenchyma and allows efficient, noninvasive evaluation of mammary enlargement.

Cytological examination of the mammary fluids in the mare has demonstrated distinct patterns corresponding to the stage of lactation (Freeman et al. 1988; Freeman 1993). Smears can be readily prepared from mammary secretions by fixing in 95% ethanol and staining with Dif Quick. Smears from the periparturient period contain a granular-to-homogeneous protein background, karyorrhectic material and a large number of lipid droplets. Periparturient fluids are typically acellular. Smears taken during lactation are characterised by granular or homogeneous protein background with occasional neutrophils (Fig 1). Mammary secretions collected after weaning and in mares that have undergone mammary involution are typically more cellular in nature. During early involution, the predominant cell types are rounded macrophages with many clear cytoplasmic vacuoles. As involution progresses, the cellularity changes to a predominance of small dark cells with minimal cytoplasm resembling lymphocytes or small epithelial cells (Fig 2). The presence of clinical or subclinical mastitis is characterised by a large number of neutrophils on cytology.

Fig 1: Normal cytology of milk.

Fig 2: Cytology of involuting gland secretion.
Neoplasms derived from the mammary gland are common in carnivores but very uncommon in herbivores (Misdorp 2002). Tumours of the equine mammary gland are rare, with only a few reported cases of mammary gland neoplasms in the last 30 years (Hirayama et al. 2003).

Overall, this case demonstrates a methodical and pragmatic approach to mammary gland enlargement in the mare. Multiple diagnostic modalities, including physical examination, clinical pathology, ultrasound and excisional biopsy ultimately provided the information needed to make the best clinical decision for the horse.

Causes of mammary gland enlargement

Galactorrhea
Abcessation of the mammary gland
Trauma
Tumours of the mammary gland
Inappropriate lactation
Aberrant larval migrans
Mastitis
Cutaneous histoplasmosis
Periparturient udder oedema
Avocado toxicity
Premammary adipose

Manufacturer’s address

1Dade-Behring AG, Duendingen, Switzerland.

References