DIAGNOSTIC EXERCISE

From The Davis-Thompson Foundation*

Case #: **240**; Month: **July**; Year: **2024**

Answer sheet

Title: *Coital exanthema in a mare*

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Clinical History: A 4-year-old Criollo mare was placed in a paddock with a group of 40 mares and a stallion, where she remained for 14 days until painful lesions were observed around the anus and vulva. It was undetermined whether the stallion mated with the mare. Two 6X4 mm biopsies were sent to LRD/UFPel for histological examination and PCR. The mare was treated with dexamethasone (2 days), anti-inflammatory drugs (5 days), and antibiotics (7 days) and recovered approximately one week after the tissue samples were sent to the laboratory. According to the veterinarian who submitted it, no lesions were observed in the other mares or the stallion.

Gross Lesions: There were ulcerative lesions around the anus and vulva (Fig. 1), which extended to the medial aspect of the thighs, legs, and posterior region of the udder. As the disease progressed, crusts formed over the ulcerated lesions (Fig. 1), and the mare showed signs of pain.

Figure 1 The vulva has crusty and ulcerated lesions.

Microscopic description: Microscopically, there was ulceration of the vulvar epithelium with vacuolar degeneration of epithelial cells, acanthosis, multifocal necrosis, a marked infiltrate of inflammatory cells, mainly lymphocytes and few neutrophils and macrophages (Fig. 2 A and B).

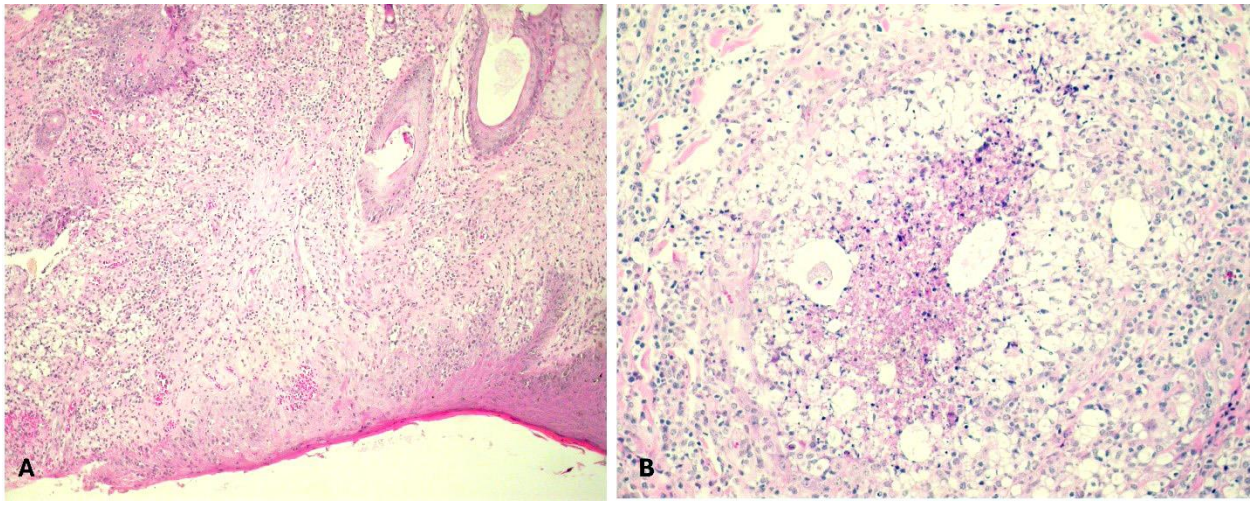

Figure 2. Vulva**. A.** There is focal ulceration of the lining epithelium. The underlying dermis is markedly infiltrated by inflammatory cells, mainly lymphocytes, in the dermis. **B**. Area of necrosis in the dermis with cellular debris and fibrin surrounded by macrophages and fewer lymphocytes and plasma cells; adjacent epithelial cells.
are vacuolated.

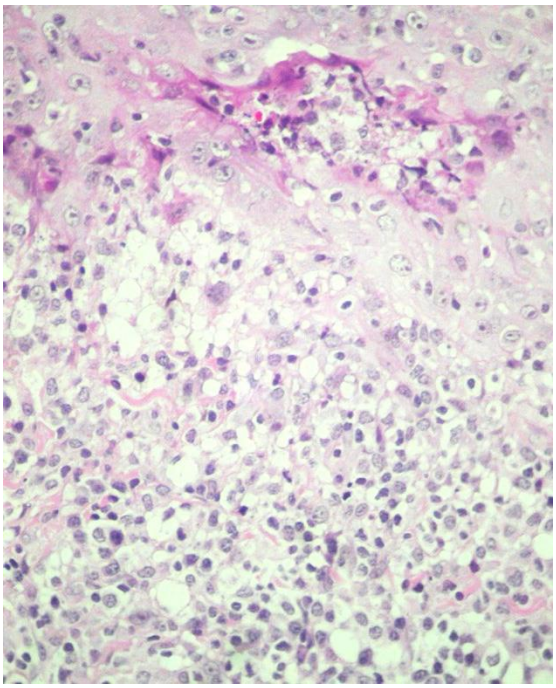

Figure 3. Skin biopsy from the vulva of the affected mare. There is vacuolation and necrosisof the epithelial cells, with lymphocyte infiltration.

DNA extraction (PCR) from the submitted sample was conducted using the ID Vet Diagnostics™ kit (USA) following the manufacturer's recommendations. We used a previously described nested-PCR protocol for herpesvirus detection (VanDevanter et al. 1996), employing the primers DFA, ILK, and KG1 in the first round and the primers IGV and IYG in the second round. In the amplification process, we utilized a 25 µL reaction volume, consisting of 12.5 µL of GoTaq® Green Master Mix, 3 µL of the sample, 6.5 µL of ultrapure water, and 1.0 µL of each primer. The thermocycling conditions for both rounds were performed at 95°C for 5 minutes, followed by 35 cycles at 95°C for 30 seconds, 46°C for 60 seconds and 72°C for 60 seconds, and a final extension step at 72°C for 5 minutes. The PCR products were subjected to electrophoresis at 120V for 40 minutes using a 1.5% agarose gel containing 4.0 µL of ethidium bromide and were then visualized using a UV transilluminator. The formation of a band between 215 and 315 base pairs was considered positive (Fig. 4).

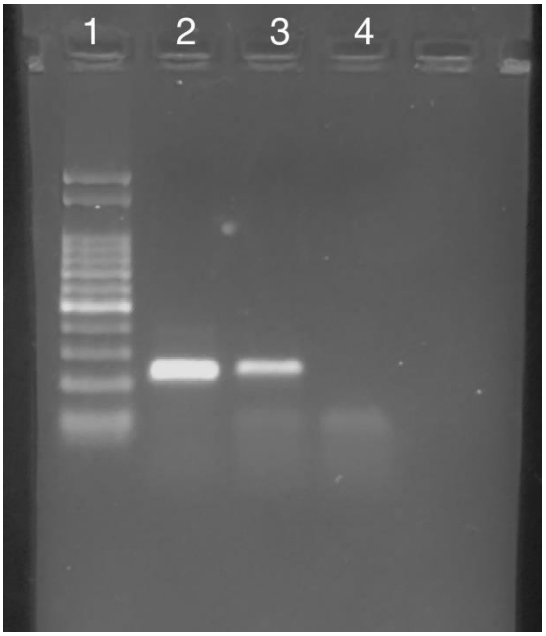

Figure 4. Electrophoresis of PCR products for herpesvirus in a 1.5% agarose gel. Lane 1: 100 bp DNA marker; Lane 2: Sample of the affected mare; Lane 3: Positive control; and Lane 4: Negative control.

Morphologic diagnosis:
Vulvitis (dermatitis), ulcerative, subacute, multifocal, moderate

Cause: *Equid alphaherpesvirus 3*

Name of the condition: *Equine coital exanthema*

Discussion: Equine coital exanthema is an acute venereal infectious disease caused by *Equid Alphaherpesvirus* 3 (EqAHV3), resulting in papules, vesicles, pustules, and ulcers on the penis and foreskin of stallions and in the perineal skin and vulvar and vaginal mucosa of mares (2). Non-sexual transmission can also occur via fomites and fresh and frozen semen; mechanical transmission via stable flies has been postulated as well. In Brazil, only two cases of the disease have been hitherto reported in stallions (4,5) despite the virus being widely distributed in the equine population used in reproduction. The disease often presents in a subclinical form. Limited clinical signs in mares and stallions during the breeding season make monitoring of the disease difficult (3,4,6). The subclinical form may also have occurred in the present case as there were no lesions neither in the other mares nor in the stallion in the same herd. The virus can remain latent, a characteristic based on epidemiological evidence by reactivation and shedding of the virus after corticosteroid treatment (1) and by spontaneous shedding of the virus in mares kept isolated for 11 months (3). It is therefore possible that this affected mare arrived at the property latently infected with the virus. The clinical lesions, both in stallions and in mares, are characteristic, allowing for a presumptive diagnosis (5). However, animals with subclinical or latent infections can compromise monitoring of the disease in a group of breeding animals. The clinical signs in these animals are generally mild and may go unnoticed(4). Viral sequencing was not performed to confirm EqAVH3 infection in the current case, but the PCR assay positive for Equine Herpesvirus in conjunction with the clinical signs and histological lesions allowed for the diagnosis of equine coital exanthema.

References:

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