HISTORY

A 30-week-old, female, 35-g mock chocolate mouse (*Mus musculus*) (case 1) and a 35-week-old, female, 35-g light mock chocolate mouse (case 2) were referred to the Bath Veterinary Referrals with a 4-week history of ulcerative lesions and severe pruritus, which appeared to have begun after a bedding change. Both mice were housed with 8 other female fancy mice, all of which appeared clinically healthy, in a large purposely built wooden enclosure. The owner reported obsessive scratching, especially in case 2, and no improvement of the lesions following administration of enrofloxacin in drinking water, topical ivermectin, and hydrocortisone (uncertain dosages) prescribed by the referring veterinarian. On clinical evaluation, there were irregularly shaped, large ulcerations on the ventral and lateral mandibular areas, ventral chest, and axillae associated with alopecia and intense pruritus in both mice (Fig. 1A). In case 1, more severe erythema was present on the ventral chest and crusts and erosions were also present at the base of the right pinna, which was held downward (Fig. 1B). Both mice were anesthetized for diagnostic testing. A computed tomographic (CT) scan was performed only on mouse 1 owing to financial limitations and considering the more extensive lesions observed in this animal. The CT scan revealed no substantial changes within the oral and nasal cavity. Cytology by impression smear revealed only a few intact neutrophils and small numbers of coccoid bacteria in both mice. Skin scrapes and hair examination were negative for hyphae, arthrospores, and ectoparasites. No dermatophytes were detected through dermatophyte test medium/Sabouraud culture. Bacterial culture performed was negative for pathogenic bacteria. Multiple skin biopsies, collected from both mice, were routinely processed and stained for histopathological examination. Histopathology revealed diffuse ulceration with serocellular neutrophilic crusts and clusters of cocci within the corneal layer (Fig. 2A). The adjacent epidermis was severely and irregularly hyperplastic (pseudocarcinomatous hyperplasia), with orthokeratotic hyperkeratosis and mild parakeratosis (Fig. 2B). Within the ulcerated areas there was locally extensive adnexal loss, severe fibroplasia, mild capillary angiogenesis, and minimal superficial perivascular inflammation (Fig. 3A). The identified inflammatory cells consisted mainly of plasma cells

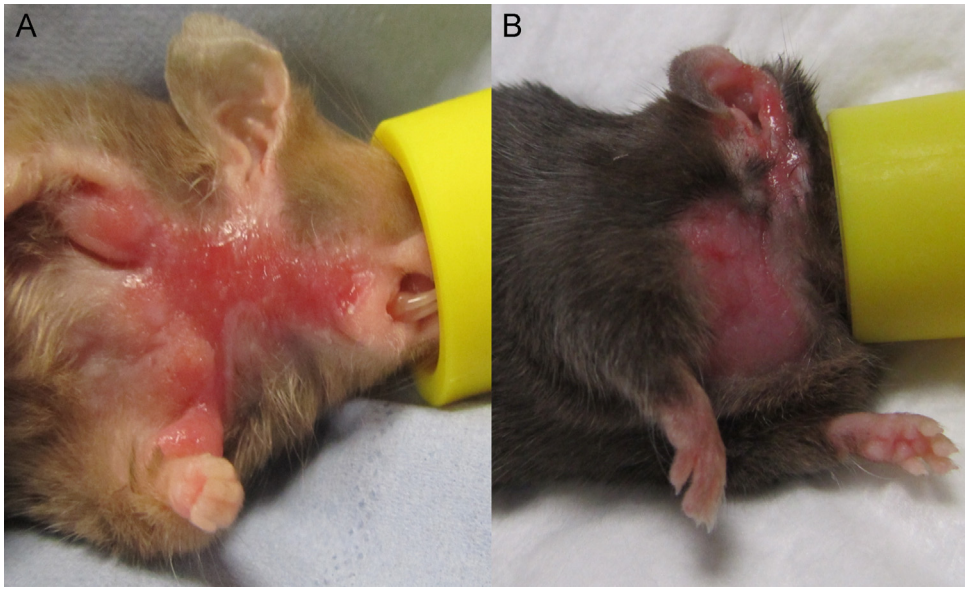

FIGURE 1. (A) Idiopathic ulcerative dermatitis. Case 1. Large irregularly shaped ulcerations on the ventral neck, chest, and axilla. (B) Idiopathic ulcerative dermatitis. Case 2. Severe erythema on the ventral chest; crusts and erosions present at the base of the right pinna.

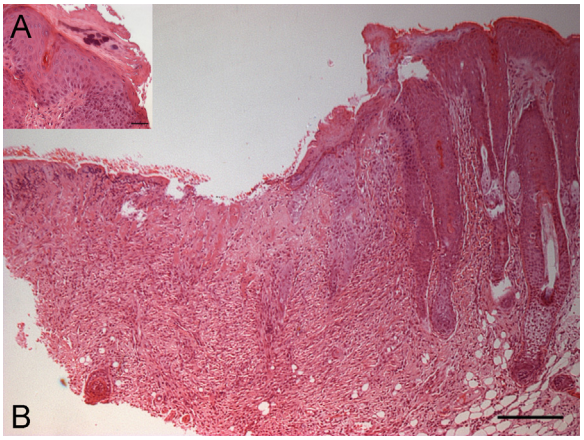

FIGURE 2. Photomicrograph idiopathic ulcerative dermatitis. (A) Locally extensive epidermal ulceration, serocellular crusts composed of scarce degenerated neutrophils, and bacterial aggregates of cocci. Haematoxylin and eosin (inset) (scale bar = 30 μm). (B) The epidermis adjacent to the ulcer has severe, diffuse, irregular to pseudocarcinomatous hyperplasia. Haematoxylin and eosin, ×50 magnification (scale bar = 120 μm).

and small mature lymphocytes admixed to scattered neutrophils and mast cells (Fig. 3B). Treatment initially included disinfection of the environment and bedding change. Systemic therapy was instituted with amoxicillin/clavulanate 20 mg/kg orally, twice daily (Synulox palatable drops, Zoetis; Madison, NY USA), meloxicam 2 mg/kg twice daily, orally (Metacam oral suspension, Boehringer Ingelheim; Ingelheim am Rhein, Germany), and essential fatty acid supplement (Viacutan pump spray, Boehringer Ingelheim; Ingelheim am Rhein, Germany). After 2 weeks, the condition became more generalized and the mice developed further erosions and crusts on the ventral chest. Enrofloxacin 20 mg/kg/day, orally (Bayer oral suspension 2.5%, Bayer; Leverkusen, Germany) was initiated and continued for 2 weeks.
No response to treatment was noted but rapid progression of ulcerative dermatitis (UD) occurred. A total of 6 sessions of laser therapy, 5 J for 48 seconds increased to 8 J for 48 seconds for the 4th session (K-Laser, VBS Direct Limited, Cheshire, UK), and toenail trim under general anesthesia were then scheduled (Fig. 4). During the course of laser therapy, because of a lack of perceived efficacy of the previous treatment protocol, the same dose of amoxicillin/clavulanate in combination with topical application of 0.0584% hydrocortisone aceponate spray, once daily (Cortavance, Virbac; Carros, France), were reinstituted and maintained for another month in both mice. At the end of the laser treatment, the skin lesions appeared to be slightly improved in case 2 but they appeared worse in case 1. Four weeks later, the skin lesions did not appear to have clinically improved, and case 1 also developed ocular problems. At this stage a new therapeutic plan was initiated that included maropitant 1 mg/kg orally, once daily (Cerenia, Zoetis; Madison, NY USA), vitamin E (3000 IU/kg, generic drug), and topical application of thiabendazole, dexamethasone, neomycin solution once daily (Tresaderm, Merial; Lione, France). About 6 days after initiating the new therapeutic plan a mild improvement in the severity of skin lesions and pruritus was observed.

At this time, evaluate the history, physical examination findings, and Figures 1 and 2. Formulate a list of differential diagnoses, potential diagnostic tests, and treatment options before proceeding.

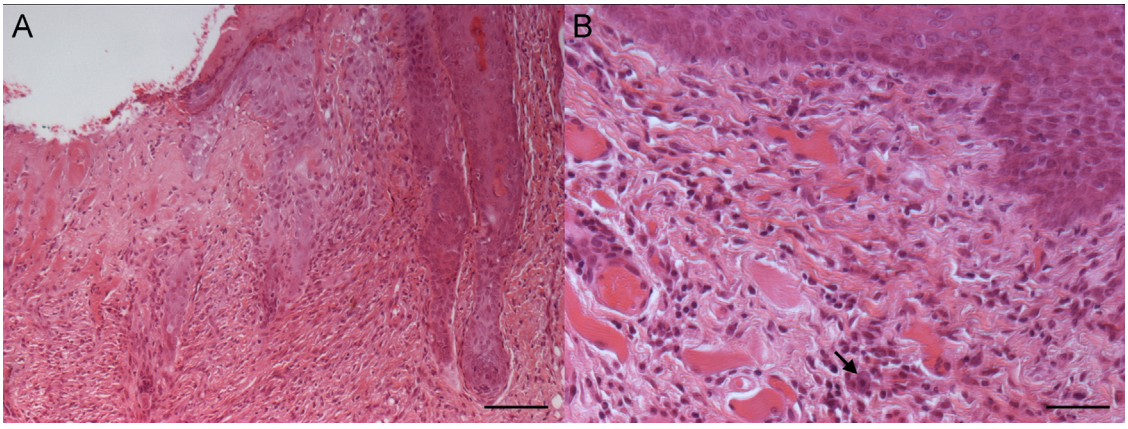

FIGURE 3. Photomicrograph idiopathic ulcerative dermatitis. (A) Dermis and panniculus are characterized by substitution of the normal architecture by severe fibroplasia with minimal inflammation and mild capillary angiogenesis (old granulation tissue and scarring). Haematoxylin and eosin, ×100 magnification (scale bar = 60 μm). (B) Photomicrograph demonstrating dermis with fibroplasia and mild perivascular to interstitial accumulation of small mature lymphocytes and plasma cells. Scarce mast cell were evidenced (arrow). Haematoxylin and eosin, ×200 magnification (scale bar = 30 μm).