The previously held view that these conditions were points on a continuum in human medicine is no longer held. Hinn et al\(^1\) proposed a veterinary classification based quantitatively on areas of both skin and mucosae affected. This is, nevertheless, essentially a clinical severity scheme, albeit one that that differs from the human scheme.

1. Erythema Multiforme (EM) minor-target lesions, only one mucosal surface affected area affected, skin area less than 10%

2. EM major is clinically similar with more than one mucosal area affected, between 10 and 50% of skin area affected and less than 10% detachment

3. Stevens-Johnson syndrome (SJS) As above but greater than 50% of the body surface affected and up to 10-30% detachment.

4. Toxic epidermal necrolysis (TEN) was considered a separate syndrome with evidence of systemic illness and greater than 30% detachment.

5. TEN-SJS crossover has features of both syndromes but less that 30% detachment.

A lack of studies with sufficient case numbers has yet to validate the clinical relevance of this scheme. Multi-centre studies that can accumulate large numbers of cases are required to match pathogeneses, clinical signs, histopathology, treatments and prognosis with the individual classifications.

**Clinical signs**

**Erythema multiforme**

Lesions are usually polymorphous in dogs. While the classic target lesion of human erythema multiforme is occasionally seen, most targets are atypical in terms of the human definition. They may overlap, have ill-defined margins or appear polycyclic and may be raised or flat. Affected areas tend to be the trunk and especially the glabrous skin of the groin and axillae. This is different from human EM minor where lesions are generally acral and facial. Symmetry is evident in the lesions distribution of humans and dogs. Other commonly affected areas include the feet, ears, and oral cavity.

Evidence from Scott\(^1\) and observations from Ihrke\(^3\) suggests that target or targetoid lesions in dogs may evolve quite rapidly. Few clinicians may have had the opportunity to follow those changes in a significant number of dogs. Targetoid lesions may include urticarial wheals (implying dermal oedema) progressing to circular, annular and target lesions. Scott\(^4\) observes that the urticarial wheals of EM do not pit on pressure. Idiopathic “old dog” erythema multiforme may have relatively stable annular lesions.

However, EM does not manifest clinically just as targetoid lesions. There are descriptions of expanding and coalescing areas of erythema as well as epidermal detachment, erosions and bullae. Crusting is common. The presence of large areas of intensely erythematous to violaceous skin should also arouse suspicion for EM.

**SJS-TEN and TEN-SJS overlap**

Prodromal fever and malaise have been recorded in the dog\(^5\). Erythema may start as a widespread macular eruption that progresses to confluent erythema. Atypical targets may also be present initially. Translucent epithelial sheets may slough. Pain is evident and a Nikolski-like sign is often present. Other lesions include ulcers, bullae, erosions and vesicles.

The face, footpads, oral cavity and mucocutaneous junctions are most commonly affected in dogs although the eye may also be affected. More widespread disease affecting the tracheobronchial and urogenital mucosae may be present in humans. Tracheobronchial lesions may be present in dogs.
Overall the lesions of EM and the SJS-TEN group could be regarded as a continuum with targetoid lesions more common in EM while bullae, erosions, ulcers and vesicles are more common in the SJS-TEN group.

In both EM and the SJS-TEN group the prognosis is related to the extent of the loss of mucosa and epidermis. In EM minor in humans the prognosis is good while the SJS in both groupings in both species is guarded to poor.

**Differential diagnosis EM**

Many dermatological conditions in dogs have targetoid lesions so there is a wide range of differentials including urticaria, dermatophytosis, drug reactions, superficial spreading pyoderma, epitheliotrophic lymphoma, the lupus diseases, eosinophilic granulomatous disease (Wells syndrome), superantigen dermatitis and neutrophilic dermatitis (Sweets syndrome) with hepato-cutaneous syndrome and the SJS-TEN group at the more severe end. The rapid progression of the latter to more severe signs should be a point of difference between the SJS-TEN group and EM.

**Differential diagnosis of TEN, SJS, SJS-TEN overlap**

These are the differential diagnosis of vesicles, bullae erosion and ulcers. They include a number of autoimmune diseases including pemphigus vulgaris, lupus, vasculitis, thermal injury, acquired epidermolysis bullosa and bullous pemphigoid and EM. Again the extent of the areas affected, the degree of mucosal involvement, the presence of a Nikolski-like sign and rapid progression of lesions would provide greater clinical suspicion for SJS-TEN group.

**Diagnosis**

As usual this is based on history, clinical signs, ruling out other causes of the specific lesions present and histopathology. Any history of neoplasia or illness should be considered relevant in EM. Vaccination, topical or systemic drug use may be more relevant for the SJS-TEN group. Histopathology will not reliably distinguish EM from a number of other diagnoses on its own but nevertheless offers vital support for this diagnosis. Biopsy sites should be intact erythematous skin or mucous membrane. Multiple sites should be sampled and ulcerated or crusted skin should be avoided. Submissions for histopathology should be marked “urgent” when SJS-TEN is suspected. Histopathology should be diagnostic for mature lesions of TEN in most canine cases.

**Cats**

The number of reported cases of EM in cats is insufficient to confirm a set of clinical signs but target lesions, exfoliation and erythema have all been recorded. Clinical signs of TEN appear similar to those in the dog.

**Horses**

EM is a rare disease of horses. Urticarial, targetoid and annular to serpiginous lesions may be distributed somewhat symmetrically over the trunk and do not usually crust. Mucous membrane lesions may also be present. It has been proposed that reticulated leukotrichia and hyperaesthetic leukotrichia are forms of EM5. Lesions frequently persist for weeks or months. Spontaneous recovery occurs in some horses and recurrence has been reported.

While presentations consistent with SJS have been recorded TEN appears to have yet to be described in the horse.

In all species the type and severity of clinical signs, their speed of progression and the areas affected will assist in identifying causes, prognosis and treatment.
References

2. Scott DW, Miller WH. Veterinary Dermatology 1999, 10, 297-309.

General References


Pascoe RR, Knottenbelt DC. In: Manual of Equine Dermatology, W. B. Saunders, 1999: 170-1