Contagious pustular dermatitis (Orf, scabby mouth, contagious ecthyma)

**Cause**
Orf is caused by a pox virus (genus Parapoxvirus) which can remain infective in dried scabs on pasture for many months. Orf is a zoonosis (transmissible to humans).

**Clinical presentation**
Contagious pustular dermatitis virus most commonly results in proliferative lesions at the coronary band and along the gum margins, being particularly severe in artificially-reared lambs less than two months-old. Morbidity can be high but mortality in uncomplicated cases is low. Lesions persist for some two to four weeks then slowly regress. Disease in the flock generally persists for up to 12 weeks.

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*Scabs progress to large proliferative wart-like structures*
Scabs progress to large proliferative wart-like structures, which bleed profusely following trauma to their base. Large scabs are often present at the commissures of the lips and along the gum margins surrounding the incisor teeth. Much less commonly, lesions may involve the hard palate and tongue.

Typically, virus rapidly spreads within a group of orphan lambs sharing the same feeding equipment. In sucking lambs lesions frequently transfer to the inner aspect of the ewe’s teats; this area of the teat having been traumatised by the lamb’s incisor teeth permits entry of virus.

*Orf lesions can progress to large proliferative wart-like structures on the lips.*
Orf lesions frequently transfer to the inner aspect of the ewe's teats and predispose to mastitis. These teat lesions are painful and the ewe will typically not allow the lambs to suck. Mastitis, occasionally gangrenous in nature, may follow the development of such teat lesions.

Contagious pustular dermatitis virus and Staphylococcus aureus may act synergistically to cause severe facial dermatitis which appears as sharply-demarcated areas extending up 8 cms from the muzzle and involving the lower lip with scab material also palpable within the hairs extending for a further 2-3 cm from the periphery of the visible lesions. The skin is oedematous with exudation and superficial pus accumulation forming hard scabs separated by deep fissures. Removal of the scabs reveals a deep bed of exuberant granulation tissue.

Contagious pustular dermatitis virus and Dermatophilus congolensis may act synergistically to produce large granulomatous masses extending 4 to 8 cms proximally from the coronary band often referred to as "strawberry footrot". These lesions bleed profusely when traumatised. Typically, strawberry footrot lesions only affect one leg and are more commonly seen in weaned lambs recently moved onto stubbles. While lesions are severe in individual lambs, the morbidity is generally low. Healing takes many months.

Differential Diagnosis
The possibility of foot and mouth disease must not be overlooked but orf presents with large bleeding scabs rather than vesicles.

Virus can be demonstrated by direct electron microscopy of fresh lesions.

Treatment
Treatment is largely unsuccessful, except for lambs with secondary bacterial infection of scabs which show a good response to intramuscular procaine penicillin injections for five to seven consecutive days.
A good response to intramuscular procaine penicillin injections for secondary infection of orf lesions (see above image).

Management/Prevention/Control measures
Disease is introduced into a flock by carrier sheep with no obvious skin lesions. Infection can remain viable in dry scab material for many months.

Control following scarification with a live vaccine is routinely undertaken in many flocks in the UK. Vaccine should not be used in a clean flock without a history of orf. The skin is scarified with the live vaccine approximately 6 weeks before the anticipated occurrence of orf. Care must be exercised during handling the live vaccine as it is affected by high temperatures and inactivated by disinfectants.

Dermatophilosis (lumpy wool, mycotic dermatitis, rain scald)
Dermatophilosis is a common skin infection of sheep world-wide but is of minor significance in the UK regarding high quality wool production. The disease is caused by Dermatophilus congolensis which is spread during wet conditions and close contact during gathering etc. Lesions can attract blowflies leading to myiasis.

Clinical presentation
In the UK, dermatophilosis is encountered along the dorsum in short-wooled breeds, such as the Suffolk and Border Leicester, where it causes serum exudation and scab formation at the base of the wool fibres which then slowly grow out. Dermatophilosis is usually encountered during those summers when there has been wet weather for three to six weeks after shearing. Occasionally, dermatophilosis lesions attracts blowflies causing myiasis. Discrete 3 to 5 mm diameter "bottle-brush" lesions are often found around the muzzle and on the margins of the ears of emaciated sheep.

Dermatophilosis more commonly presents as discrete 3 to 5 mm diameter "bottle-brush" lesions on muzzle and margins of the ears of poorly-thriven sheep.

Treatment
Procaine penicillin injected intramuscularly for three consecutive days effects a cure but it may take several weeks for the scabs to be shed from the growing fleece. Skin lesions re-grow black wool which is considered a defect at sale.
Procaine penicillin injected intramuscularly for three consecutive days effects a rapid cure.

Photosensitzation (yellowses, plochteenth, alveld, facial eczema)
Typically, white-faced lambs two to six months-old are affected during the summer months. In sheep, photosensitisation occurs either as a primary condition or secondary to liver damage. Primary photosensitisation follows ingestion of photodynamic agents, for example hypericin from St. John's Wort (Hypericum perforatum).

Clinical presentation
Initially, affected animals are dull and attempt to seek shade. The ears in particular are affected and become swollen and pendulous. The face, eyelids, lips and lower limbs may also become oedematous. There is frequent head-shaking and often self trauma to the head by rubbing against fence posts or kicking at the head with the hind feet. Necrosis of the ear tips develops within a few days which give a "curled-up" appearance.

In severe cases, the ears may be sloughed.

Treatment
Affected sheep must be removed from pasture and confined in dark buildings to prevent further exposure. Corticosteroids are helpful during the early stages to reduce the associated oedema. Other symptomatic treatments include topical antibiotic powders and fly control preparations.

Management/Prevention/Control measures
Primary photosensitization occurs sporadically and the cause is often not determined.

Periorbital eczema
Periorbital eczema is a common skin condition when sheep have too little space allowance at feed troughs.
Periorbital eczema is more common when sheep have too little space allowance at feed troughs.

**Clinical presentation**
Affected sheep have swollen and painful eyelids blocking vision in that eye.

Early periorbital eczema lesion affects this sheep’s right eye.

**Treatment**
A single intramuscular injection of procaine penicillin affects a rapid response within 24 hours. Ewes with impaired vision in both eyes should be housed to ensure adequate feeding and prevent death by misadventure. Provide adequate space at feed troughs (450 mm per sheep). Alternatively, use a “snacker” sheep feeder.

Space allowance is not a problem when feeding sheep with a snacker.

**In-growing horns**
Horned sheep must be checked regularly for in-growing horns. Horns contacting the skin must be removed.

In-growing horn in a mature ram - immediate attention is essential.
Horn tip removed revealing bone remodelling caused by pressure from the in-growing horn.

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