Common Diseases of the Canine Nasal Planum with emphasis on Discoid Lupus Erythematous

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Clinical Anatomy of Nasal Planum

- Distinct cobblestone architecture
- Physiological pigmentation
Clinical Anatomy of Nasal Planum

- Modified thick epidermis
- Rete pegs
- NO HAIR FOLLICLES

http://www.plosgenetics.org/
- Congenital
- Environmental
- Infectious
- Immune mediated
- Metabolic
- Neoplastic
Metabolic:  Zn responsive Dermatosis
Congenital:  Inherited nasal hyperkeratosis
Immune mediated:  Scaling form of pemphigus complex
Reaction Patterns

Depigmentation

Non-inflammation: Vitiligo. Cobblestones

Inflammation: Loss of cobblestones
Reaction Patterns
Erosion, Ulcers and Crusts
Mucocutaneous Pyoderma

- Lips and / or Nose
- German Shepherds overrepresented in lip form
- Histopathology cannot reliably differentiate cutaneous lupus from mucocutaneous pyoderma.
- Dx based on resolution after 3 weeks of appropriate antibiotics

Wiemelt et al Vet Dermatol. 2004

Clinical diagnosis, determined by response to treatment for 15/27 cases, was not predictable based on scoring of histopathological features.
Mucocutaneous Pyoderma
Immune Mediated Disease

Planum, Pinnae, Pads

Alert - Nasal planum, mucocutaneous junctions, scrotum
“Pemphigus” Greek word for vesicle.

Auto-antibody against tight junctions => acantholysis

Pustules => Collarettes, erosions and crusts

May be very pruritic!
Pemphigus Foliaceus

- Over 50% of canine cases before 5 yrs old
- Spontaneous ++++
- Drug induced (sometimes) Paraneoplastic (rare)
- Sunlight exacerbates autoantibodies

Nasal planum lesions common but NOT universal.
- If nasal planum involved NOT FOLLICULITIS

More serious immune mediated disease that requires more aggressive (pref combo) therapy
Pemphigus Foliaceus

Erosions and ulcers from ruptured pustules and **yellow crusts** = leucocytes
Pemphigus foliaceous presenting as multiple epidermal collarettes
Pemphigus Foliaceus - Scale predominating
Pemphigus Foliaceus

Muco-cutaneous lesions

Pustules

Intact and ruptured
Pemphigus Foliaceus - Feet
Pemphigus cytology

Eosinophils
Pemphigus Foliaceus Diagnosis

Sample intact pustule by needle puncture (best) or collect impression smear from under crusts.

Acantholytic keratinocytes may be present in lower numbers in pyoderma or ringworm. DDX immature keratinocytes

If severe & highly suspect, biopsy NOW. Otherwise 2-3 week antibiotic course to eliminate pyoderma as a Dx and histopathological complication.
Pemphigus Erythematosus

• Limited to head only
• May be ANA +
• Crusts often yellow tinged
• Cytology = many neutrophils but acantholytic cells scarce
• Confirmed by post antibiotic biopsy

More benign disease
Often responds to less aggressive therapy as per discoid lupus
VASCULITIS
Cutaneous (Discoid) Lupus

• Nasal planum is most common target

• May involve other mucocutaneous junctions, pinnae, scrotum and other skin

• Depigmentation, erosions and ulceration

• Limited to skin only. Not systemic

• ANA -ve
Typical lesions

Uncontrolled

Controlled
Severe Facial Discoid Lupus
Cutaneous “discoid” lupus.

Alternative sites
Cutaneous (Discoid) Lupus Biopsy

- Biopsy areas showing depigmentation and erythema.
- Avoid areas of ulceration and erosion
- Delay biopsy until antibiotic trial
- Is a biopsy needed for typical lesions?
Balance the severity of cutaneous lupus against the risks of therapy. Use the least toxic drugs and control sunlight exposure. 90% resolution is target!
Treatment Overview

- Sun Avoidance essential. Control without this almost impossible.
- Antibiotics for secondary infection
- Short term immunosuppressive doses of prednisolone to induce remission.
- Long term immunosuppression, as per pemphigus foliaceus, is the last resort.

- Topical Corticosteroids: **skin thinning**, calcinosis cutis and infections. Short term use OK. Long term 1-2x week but watch for skin thinning.
Conservative Immunosuppressives

✓ Tetracycline / Doxycycline and niacinamide
✓ Topical Tacrolimus 0.1% (Compounded)
✓ 1% Pimecrolimus (no data)
✓ Hydroxycloroquine (Plaquinil)
✓ Cyclosporine (severe refractory cases)
✓ Azathioprine (severe refractory cases)
✓ Ancillary therapy
  • Vitamin E
  • Omega 3/6 oils
Topical Tacrolimus

- Similar action but different binding site to cyclosporine
- Pimecrolimus: No studies

- 10 cases, 0.1% tacrolimus once a day, 80% responded. 75% of responding cases could be maintained on topical tacrolimus alone.

- Compounded tacrolimus is the only form available in Australia and the author has NOT enjoyed success using it as monotherapy.

- Unregistered and wear gloves
Tetracycline and Niacinamide
(nicotinamide, nicotinic acid)

✓ Multiple anti-inflammatory properties. Neither effective alone in dogs. Widely used.

✓ 70% success rate in maintaining. Assess after 10 weeks of use.

✓ Dogs >10kg BW 500mg of each TID. Smaller dogs 250mg of each TID

✓ Doxycycline (7.5-10mg/kg SID) may be substituted for tetracycline. Not cheap.

✓ Compliance problem with 3x day medication. The author has had good results with doxycycline 1x day and 350-750 mg of niacinamide 2x day
Other immunosuppressants

**Oral Cyclosporine**
Many anecdotal reports that effective at atopic dermatitis protocol
For refractory cases

**Hydroxychloroquine**
(Plaquenil)
Antimalarial with immuno-modulating properties
Good safety profile in dogs
5mg/kg once a day dose and cheap. Assess after 10 weeks.
This is the “go to” drug for human DLE. The author has had success in a limited number of cases.
Vitamin E and Essential Fatty Acids

**Vitamin E**
- Mild anti-inflammatory effects
- 500-1000 IU /day
- No benefit from megadoses
- May take 2 months for effects

**Omega 3/6 fatty acids**
- Mild anti-inflammatory effects
- No optimum dose rate or omega 3/6 ratio determined for immune mediated disease
- Indicative dose = 1ml of cold water marine fish oil/3kg.
- May take 2 months for effects
A sample treatment plan

- Confirm diagnosis
- Aim for 90% symptom control. Pigment may never return.
- Keep out of sun. Non zinc sunscreens high SPF not a substitute.
- Treat secondary infection
- 4-6 weeks reducing course of corticosteroids (topical and parental to induce remission. Potent topical steroids no more than 1-2x week long term. Watch skin thinning.
- Same time, start Doxycycline/niacinamide or hydroxychloroquinine. Vit E and omega-3 oil may help.
- Re-assess in 10 weeks. If not good response, change systemic meds over and/or add in topical tacrolimus
- Treat flares with pulses of prednisolone and topical steroids
- If refractory, cyclosporine