

# STERILE NODULAR/GRANULOMATOUS SKIN DISEASES

## BASICS

### OVERVIEW

- Skin diseases in which the primary lesions are nodules that are solid, elevated, and greater than 1 cm in diameter

### SIGNALMENT/DESCRIPTION of ANIMAL

#### *Species*

- Dogs and cats

#### *Breed Predispositions*

- Nodular dermatofibrosis—German shepherd dogs
- Calcinosis circumscripta—German shepherd dogs
- Malignant histiocytosis—Bernese mountain dogs

#### *Mean Age and Range*

- Nodular dermatofibrosis—German shepherd dogs, 3 to 5 years of age
- Calcinosis circumscripta—German shepherd dogs, less than 2 years of age

### SIGNS/OBSERVED CHANGES in the ANIMAL

- Depend on cause
- Hair loss (known as “alopecia”)
- May see lesions over pressure points (such as skin over bones)
- Nodules may be found anywhere on body; usually solid and elevated above the surface of the skin
- Lesions containing calcium may be very firm to hard
- Lesions may be tender or painful to the animal

### CAUSES

- Amyloidosis
- Foreign body reaction
- Spherulocytosis
- Idiopathic sterile granuloma and pyogranuloma
- Canine eosinophilic granuloma
- Calcinosis cutis
- Calcinosis circumscripta
- Malignant histiocytosis
- Cutaneous histiocytosis
- Sterile panniculitis
- Nodular dermatofibrosis
- Cutaneous xanthoma

### RISK FACTORS

- Foreign body reaction—induced by exposure to any irritating material (such as concrete dust or fiberglass)
- Hair foreign bodies—increased risk for large dogs that rest on very hard surfaces
- Calcinosis cutis—increased risk with exposure to high doses of steroids
- Panniculitis—increased risk with vitamin E–deficient diet

## TREATMENT

### HEALTH CARE

- Most of these disorders can be treated on an outpatient basis
- Dogs with calcinosis cutis may need to be hospitalized for generalized bacterial infection (known as “sepsis”) and intense topical therapy

### SURGERY

- Amyloidosis—if the lesion is solitary, it may be removed surgically
- Spherulocytosis—only effective treatment is surgical removal
- Foreign body reactions—best treated by removal of the offending substance, if possible
- Calcinosis circumscripta—surgical removal is the treatment of choice in most cases
- Sterile panniculitis—single lesions can be removed surgically

## MEDICATIONS

Medications presented in this section are intended to provide general information about possible treatment. The treatment for a particular condition may evolve as medical advances are made; therefore, the medications should not be considered as all inclusive.

- Amyloidosis—no known therapy (unless the lesion is solitary and can be removed surgically)
- Idiopathic sterile granuloma and pyogranuloma—prednisone is the first line of therapy; continue steroids for 7 to 14 days after complete remission; then taper dose; for cases that are not responsive to steroids, azathioprine in combination with prednisone or sodium iodide may be tried
- Foreign body reactions—best treated by removal of the offending substance, if possible; for hair foreign bodies, the dog should be placed on softer bedding and topical therapy with agents to soften and loosen crusts and scales on the skin (known as “keratolytic agents”) should be initiated; many dogs with hair foreign bodies also have secondary deep bacterial infections that need to be treated with both topical (applied directly to the skin lesions) and systemic (administered by injection or mouth) antibiotics
- Canine eosinophilic granuloma—prednisone generally produces a good response
- Cutaneous histiocytosis—high-dose steroids and chemotherapeutic drugs result in remission; recurrences are common; L-asparaginase has been helpful in some cases
- Calcinosis cutis—underlying disease must be controlled, if possible; most cases require antibiotics to control secondary bacterial infections; hydrotherapy (which may be achieved with either a whirlpool bath or by spraying cool water under pressure against the affected skin) and frequent bathing in antibacterial shampoos minimize secondary problems; topical DMSO is useful (applied to no more than one-third of the body once daily until lesions resolve)
- Sterile panniculitis—prednisone is the treatment of choice; administered until lesions regress; then tapered; some dogs remain in long-term remission, but others require prolonged alternate-day therapy; a few cases respond to oral vitamin E
- Nodular dermatofibrosis—skin condition seen in German shepherd dogs; no therapy for most cases, because these dogs usually also have kidney disease or cancer; if cancer involves only one kidney, surgical removal of the affected kidney may be helpful.
- Cutaneous xanthoma—correction of the underlying diabetes mellitus (sugar diabetes) or correction of the increased lipoprotein content of the blood (lipoproteins are complexes of lipids [compounds that contain fats or oils] and protein; condition known as “hyperlipoproteinemia”) is usually curative

## FOLLOW-UP CARE

### PATIENT MONITORING

- Patients on long-term steroids should have a complete blood count (CBC), blood chemistry screen, urinalysis, and urine culture done every 6 months
- Dogs being treated with DMSO for calcinosis cutis should have blood calcium levels checked every 7 to 14 days, starting at the beginning of treatment

### POSSIBLE COMPLICATIONS

- Death from generalized (systemic) amyloidosis, malignant histiocytosis, and nodular dermatofibrosis

### EXPECTED COURSE AND PROGNOSIS

- Depend on cause
- Generalized (systemic) amyloidosis, malignant histiocytosis, and nodular dermatofibrosis—invariably fatal
- Malignant histiocytosis—no effective therapy; it is rapidly fatal

## KEY POINTS

- Skin diseases in which the primary lesions are nodules that are solid, elevated, and greater than 1 cm in diameter