Abscess, Cat Bite

BASIC INFORMATION

DEFINITION
Subcutaneous abscess in a cat secondary to a bite wound from another cat

EPIDEMIOLOGY

SPECIES, AGE, SEX
- Cat, any age, either sex
- Potentially more common in males

RISK FACTORS
- Intact male
- Outdoor existence

CONTAGION AND ZOONOSIS
- Bacteria flora of oral cavity and skin:
  - *Pasteurella multocida*: major causative organism
  - *Staphylococcus* sp.
  - *Streptococcus* sp.
- Humans can develop severe cellulitis and abscess formation from these bacteria secondary to a cat bite.
- Feline immunodeficiency virus (FIV) infection: main source of transmission in cats is bite wounds.

GEOGRAPHY AND SEASONALITY: Possibly greater occurrence in warmer months when cats are outdoors more frequently.

ASSOCIATED CONDITIONS AND DISORDERS
- Cellulitis
- Skin necrosis
- Osteomyelitis of underlying bone

CLINICAL PRESENTATION

HISTORY, CHIEF COMPLAINT
- Nonspecific complaints:
  - Lethargy
  - Anorexia
- Subcutaneous mass/swelling:
  - Soft/turgid
  - Painful
  - Warm to touch
- Open wound with purulent drainage or with crusted, dried discharge interpreted as matted hair

PHYSICAL EXAM FINDINGS: Abscess may be well circumscribed and easily delineated, or broad-based and difficult to identify.

- Nonspecific findings:
  - Fever
  - Dehydration
  - Lethargy
- Subcutaneous mass/swelling:
• Soft/turgid
• Painful on palpation
• ± draining tract
  • Possibly:
    • Evidence of necrosis of overlying skin
    • Inflammation/induration of surrounding skin
      ■ Developing cellulitis

ETIOLOGY AND PATHOPHYSIOLOGY

• Bite results in puncture or laceration of skin and underlying tissues
• Potential for "iceberg" effect
  • Damage to underlying tissue greater than skin puncture wound
• Bacteria from oral cavity, hair, skin, and surrounding environment are injected into the subcutaneous tissues
  • Pasteurella multocida
  • Staphylococcus and Streptococcus spp.
  • Anaerobes
• Devitalized tissue, dead space, and tissue fluid accumulation provide excellent medium for bacterial growth and abscess formation
• Associated problems that can develop include:
  • Cellulitis
  • Draining tract
  • Necrosis of overlying skin
  • Osteomyelitis of underlying bone
  • Fistula formation due to perforation of a hollow organ
    ■ Rectum

DIAGNOSIS

DIFFERENTIAL DIAGNOSIS

Dependent on site of abscess but may include:

• Foreign body abscess
• Blunt or other penetrating trauma with abscess formation
• Neoplasia
• Anal sac abscess
• Salivary mucocele
  • Extremely rare in cats

INITIAL DATABASE

• Complete blood count
  • Neutrophilia ± toxic changes
    ■ Inflammation, infection
  • Neutropenia with toxic changes (degenerative left shift)
    ■ Severe inflammation (cellulitis)/infection
    ■ Sepsis
• Radiographs of affected area
  • Underlying osteomyelitis
    ■ Ilium, sacrum, or coccygeal vertebrae in particular
• Fine-needle aspiration of mass
  • Cytology to confirm abscess
  • Bacterial culture and sensitivity testing
    ■ Aerobic and anaerobic
    ■ Generally not performed in routine cases without systemic signs of illness
    ■ Indicated in cases where systemic illness, osteomyelitis, or concurrent immunosuppression or other diseases are present
• Serologic testing for FIV
  • Indicated in all cats with bite wounds, because this is the main route of transmission for FIV
TREATMENT
Most abscesses will resolve with lancing, establishment of drainage, and wound debridement if necessary, with or without systemic antibiotic therapy. Failure to resolve or presence of systemic signs warrants further evaluation and treatment.

THERAPEUTIC GOAL(S)
- Resolve abscess and prevent early recurrence
- Prevent development of sepsis

ACUTE GENERAL TREATMENT
- Surgical exploration, debridement and lavage of abscess pocket(s)
  - See Suggested Reading below.
  - Wounds should be closed only if all devitalized, necrotic tissue has been removed and infection has been controlled.
- Provide postoperative drainage
- Antibiotic therapy for bacterial infection
  - Long-term therapy based on results of microbiologic culture and sensitivity tests.
  - Empiric therapy until results available:
    - Cefazolin, 22 mg/kg, IV q 6h, or
    - Amoxicillin, 10-20 mg/kg, orally, q 12h

CHRONIC TREATMENT
- Open wound and drain management until wounds have healed
  - Appropriate bandaging techniques to provide suitable environment for wound healing and to protect drains
- Antibiotic therapy (see above) until resolution of infection
- Castration/ovariohysterectomy to decrease roaming and fighting

POSSIBLE COMPLICATIONS
- Progressing cellulitis and necrosis of tissues due to inadequate surgical debridement and wound management
- Failure to resolve abscess
  - Inadequate surgical exploration, debridement, and drainage
  - Primary wound closure in the face of infection
- Dehiscence of surgically closed wound
  - Primary wound closure in the face of infection
  - Inadequate debridement of devitalized tissue
- Development of nonhealing open wound (pocket wound)
  - Axillary and inguinal regions in particular
  - Significant problem in cats
  - Can be difficult to resolve; consider referral

RECOMMENDED MONITORING
- Repeat visits to veterinarian as necessary for bandage changes and drain removal until abscess has resolved and wounds have healed
- Observe for recurrence of abscess
- Observe for development of new abscesses

PROGNOSIS AND OUTCOME
- Excellent provided appropriate surgical and postoperative care instituted
- Guarded if:
  - Cellulitis and tissue necrosis develops
    - May require repeated surgical debridement and prolonged open wound management
May require reconstructive surgery
  - Nonhealing/pocket wound develops
  - Requires complex reconstructive surgery

PEARLS & CONSIDERATIONS

COMMENTS

- Do not close bite wounds unless sure that wound has been converted to a surgically clean wound that is free of contamination and devitalized tissue and that adequate postoperative drainage can be provided.
- If in doubt, leave the wound open to heal by contraction and epithelialization.

PREVENTION

- Have cat castrated/spayed
- Keep cat indoors

CLIENT EDUCATION

- Keep cats indoors to prevent problem
- Neuter cats to decrease fighting
- Seek early veterinary care if suspect abscess developing

SUGGESTED READING


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