

Bleeding from the Nose

(Epistaxis)

Basics

OVERVIEW

- Bleeding from the nose (nose bleed)

SIGNALMENT/DESCRIPTION OF PET

Species

- Dogs
- Cats

Breed Predispositions

- Varies, depending on underlying cause

Mean Age and Range

- Varies, depending on underlying cause

Predominant Sex

- Varies, depending on underlying cause

SIGNS/OBSERVED CHANGES IN THE PET

- Bleeding from one or both nostrils (nasal hemorrhage)
- Sneezing and noisy breathing (known as “stertor”)
- May see evidence of bleeding from other areas of the body if nosebleed related to blood-clotting disorder (known as “coagulopathy”), such as blood in the stool (known as “hematochezia”); dark black, tarry stool due to the presence of digested blood (known as “melena”); blood in the urine (known as “hematuria”)
- Noisy breathing, high-pitched (known as “stridor”)—may be present with cancer, foreign body, or advanced inflammatory disease of the nose
- May see bruising, small bleeding spots (known as “petechiae”), larger bleeding spots (known as “ecchymoses”) or blood-filled swellings (hematomas) if nosebleed related to blood-clotting disorder (coagulopathy)
- May have blindness due to bleeding in the retina (retinal hemorrhages) or retina detachment, associated with blood-clotting disorders (coagulopathy) or high blood pressure (known as “hypertension”), with hypertension, possible heart murmur or arrhythmia

CAUSES

- Bleeding from the nose results from one of three abnormalities—bleeding disorders or blood-clotting disorders (coagulopathies); presence of a local lesion; blood vessel (vascular) or generalized (systemic) disease

Bleeding Disorders or Blood-Clotting Disorders (Coagulopathies)

Low Number of Platelets or Thrombocytes in the Blood (known as “Thrombocytopenia”)



- Immune-mediated disease—thrombocytopenia for unknown reason (so-called "idiopathic disease"); systemic lupus erythematosus (SLE); drug reaction; modified-live vaccine (MLV) reaction
- Infectious disease—*Ehrlichia* infection; *Anaplasma* infection; Rocky Mountain spotted fever; *Babesia* infection; feline leukemia virus (FeLV) or feline immunodeficiency virus (FIV)-related illness
- Bone-marrow disease—cancer; aplastic anemia, where the bone marrow is not generating blood cells; infectious disease (fungal, rickettsial, or viral)
- Disorders that accompany cancer (known as "paraneoplastic disorders")
- Blood clotting disorder—disseminated intravascular coagulopathy (DIC), a bleeding problem in which clotting factors are activated and clotting factors and platelets are used up

Abnormal Function of Platelets or Thrombocytes in the Blood (Known as "Thrombopathia")

- Congenital (present at birth)—von Willebrand disease (bleeding disorder caused by lower than normal levels of factor VII—one of the ingredients required to clot blood); abnormally functioning platelets (thrombopathia)
- Acquired (present after birth)—nonsteroidal anti-inflammatory drugs (NSAIDs); clopidogrel (a medication to prevent strokes and heart attacks in people); increased levels of globulin, a body protein, in the blood (known as "hyperglobulinemia" that may be seen with *Ehrlichia* infection or multiple myeloma); increased concentration of nitrogenous waste products including urea in the blood (known as "uremia"); blood clotting disorder—disseminated intravascular coagulopathy

Blood-Clotting (Coagulation) Factor Defects

- Blood-clotting (coagulation) factors are present in the plasma of the blood. They are ingredients that come together in a certain order to produce a clot. The clotting factors are identified by Roman numerals, I through XII. If one or more blood-clotting factor is present in too low a level or if the blood clotting factors have been used up, clotting will not occur normally and bleeding will result. The amount of bleeding varies.
- Congenital (present at birth): hemophilia A (factor VIIIc deficiency) and hemophilia B (factor IX deficiency)
- Acquired (present after birth): poisoning with agents used to kill rodents (mice, rats)—these agents (known as "anticoagulant rodenticides," such as warfarin) prevent blood clotting; liver disease; and disseminated intravascular coagulopathy (DIC), a bleeding problem in which clotting factors are activated and clotting factors and platelets are used up

Local Lesion

- Foreign body
- Trauma
- Infection—fungal (*Aspergillus*, *Cryptococcus*, and *Rhinosporidium*); viral or bacterial; usually see blood-tinged nasal discharge rather than obvious bleeding
- Cancer (adenocarcinoma, carcinoma, chondrosarcoma, squamous cell carcinoma, fibrosarcoma, lymphoma)
- Dental disease—abnormal opening between the mouth and nose (known as an "oronasal fistula"), tooth-root abscess
- Inflammation of the nasal tissues, characterized by the presence of lymphocytes and plasma cells (so-called "lymphoplasmacytic rhinitis")

Blood Vessel (Vascular) or Generalized (Systemic) Disease

- High blood pressure (known as "hypertension")—kidney disease; excessive production of thyroid hormone (known as "hyperthyroidism"); excessive production of steroids by the adrenal glands (known as "hyperadrenocorticism" or "Cushing's disease"); high blood pressure caused by unknown reason (known as "idiopathic disease")
- Increase in proteins in the serum of the blood (known as "hyperviscosity")— increased levels of globulin, a body protein, in the blood (hyperglobulinemia), may be seen with *Ehrlichia* infection or multiple myeloma (cancer of the bone marrow in which abnormal proteins are produced); increased number of red blood cells (known as "polycythemia")
- Inflammation of the blood vessels (known as "vasculitis")—immune-mediated and rickettsial diseases

RISK FACTORS

Coagulopathy

- Immune-mediated disease—young to middle-aged, small to medium-sized female dogs
- Infectious disease—dogs living in or traveling to areas where other dog or animals are carrying the infection-

causing organism; tick exposure

- Abnormality of the platelets (thrombasthenia)—otter hounds
- Abnormal functioning of the platelets (thrombopathia)—basset hounds, Spitz
- von Willebrand disease—Doberman pinschers, Airedale terriers, German shepherd dogs, Scottish terriers, Chesapeake Bay retrievers, and many other breeds; cats
- Hemophilia A—German shepherd dogs and many other breeds; cats
- Hemophilia B—Cairn terriers, coonhounds, Saint Bernard's, and other breeds; cats

Local Lesion

- Aspergillosis—German shepherd dog, Rottweilers, medium to long-nosed breeds
- Cancer—long-nosed dogs (known as "dolicocephalic breeds")

Treatment

HEALTH CARE

- Blood-clotting disorder (coagulopathy)—usually inpatient management
- Mass or space-occupying lesion or blood vessel (vascular) or generalized (systemic) disease—outpatient or inpatient management, depending on the disease and its severity
- Provide basic supportive care (such as intravenous fluids, quality nutrition)
- Radiation therapy—nasal tumors; various response rates, depending on tumor type
- Recognize signs of serious bleeding (such as weakness, collapse, pallor, and obvious blood loss)
- Whole-blood or packed red blood-cell (RBC) transfusion—may be needed with severe anemia

ACTIVITY

- Minimize activity or stimuli that may lead to or increase bleeding episodes

SURGERY

- Removal of foreign body if manual or scope cannot dislodge
- Fungal infection of the nose (known as "fungal rhinitis," such as caused by *Aspergillus* and *Rhinosporidium*) may require surgical removal of part of the space-occupying lesion (known as "debulking")

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

COAGULOPATHY

- Immune-mediated disease—prednisone; additional medications may be used for cases that do not respond to prednisone alone, such as azathioprine, cyclosporine, leflunomide, human immune globulin
- Infectious disease—Rickettsial disease: doxycycline; *Babesia* infection: imidocarb, diminazene, or atovaquone with azithromycin
- Bone-marrow cancer—chemotherapy, see Myeloproliferative Disorders
- Abnormal platelet function or platelets (thrombopathia or thrombasthenia)—no treatment in most cases
- Von Willebrand disease—plasma or cryoprecipitate for sudden bleeding; desmopressin acetate or DDAVP is a synthetic antidiuretic hormone; DDAVP may help control or prevent bleeding
- Hemophilia A—plasma or cryoprecipitate for acute bleeding; no long-term treatment
- Hemophilia B—plasma for acute bleeding; no long-term treatment
- Rat poisoning (anticoagulant rodenticide poisoning)—plasma for acute bleeding; vitamin K, length of time for vitamin K treatment based on type of rat poison to which pet was exposed
- Liver disease with DIC—treat and support the underlying cause; plasma may be beneficial

LOCAL (SPACE OCCUPYING) LESION

- Serious bleeding—if body temperature normal, platelet function absent, can control with cage rest and acepromazine to lower blood pressure and promote clotting if the pet does not have a decrease in blood volume (known as "hypovolemia")

- Secondary bacterial infection—antibiotics; based on culture and sensitivity testing
- Fungal infection—topical treatment with clotrimazole or enilconazole for Aspergillosis; dapsone following surgery for rhinosporidiosis; cryptococcosis, oral and injectable antifungal agents

BLOOD VESSEL (VASCULAR) OR GENERALIZED (SYSTEMIC) DISEASE

- Increase in proteins in the serum of the blood (known as "hyperviscosity")—treat underlying disease (such as *Ehrlichia* infection and multiple myeloma or polycythemia)
- Polycythemia (too many red cells)—treated by removing some blood (known as “phlebotomy” or blood letting)
- Inflammation of the blood vessels (vasculitis)—prednisone for immune-mediated disease; doxycycline for rickettsial disease

HIGH-BLOOD PRESSURE (HYPERTENSION)

- Treat underlying disease—kidney disease, excessive production of thyroid hormone (known as "hyperthyroidism"); excessive production of steroids by the adrenal glands (known as "hyperadrenocorticism" or "Cushing's disease")
- Reduce weight
- Restrict sodium in diet
- Calcium channel blockers—amlodipine
- Angiotensin-converting enzyme (ACE) inhibitors—benazepril; enalapril
- β -blockers—propranolol; atenolol
- Diuretics—hydrochlorothiazide; furosemide

Follow-Up Care

PATIENT MONITORING

- Depends on underlying cause; discuss with your pet's veterinarian
- Platelet count for pets with low platelet counts (thrombocytopenia)
- Blood-clotting (coagulation profile) for pets with blood-clotting (coagulation) factor defects
- Blood pressure for pets with high blood pressure (hypertension)
- Clinical signs

PREVENTIONS AND AVOIDANCE

- Depends on underlying cause; discuss with your pet's veterinarian
- Prevent exposure to rat poisons (anticoagulant rodenticide poisons)
- Provide dental preventive care

POSSIBLE COMPLICATIONS

- Anemia and collapse (rare)

EXPECTED COURSE AND PROGNOSIS

- Depends on underlying cause

Key Points

- Bleeding from the nose results from one of three abnormalities—bleeding disorders or blood-clotting disorders (coagulopathies); presence of a local lesion; blood vessel (vascular) or generalized (systemic) disease
- May see bleeding from other areas of the body if nosebleed related to blood-clotting disorder (known as "coagulopathy")
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