

BLEEDING FROM THE NOSE (EPISTAXIS)

BASICS

OVERVIEW

- Bleeding from the nose

SIGNALMENT/DESCRIPTION of ANIMAL

- Depends on underlying cause

SIGNS/OBSERVED CHANGES in the ANIMAL

- Bleeding from one or both nostrils (nasal hemorrhage)
- Sneezing
- May see bleeding from other areas of the body if nose bleed related to blood-clotting disorder (known as “coagulopathy”), such as blood in the stool (hematochezia); dark black, tarry stool due to the presence of digested blood (melena); blood in the urine (hematuria)
- May see bruising or blood-filled swellings (hematomas) if nose bleed related to blood-clotting disorder (coagulopathy)
- May have vision disorders due to bleeding in the retina (retinal hemorrhages) with blood-clotting disorders (coagulopathy) or high blood pressure (hypertension)

CAUSES

Bleeding from the nose results from one of three abnormalities—bleeding disorders or blood-clotting disorders (coagulopathies); presence of a mass or space-occupying 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; 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’s 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); increased levels of globulin, a body protein, in the blood (known as “hyperglobulinemia;” 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 (DIC)

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

Mass or Space-Occupying Lesion

- Foreign body
- Trauma
- Infection—fungal (*Aspergillus*, *Cryptococcus*, and *Rhinosporidium*); viral or bacterial; usually see blood-tinged nasal discharge rather than obvious bleeding
- Cancer
- Dental disease—abnormal opening between the mouth and nose (known as an “oronasal fistula”), tooth-root abscess

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”)—multiple myeloma (cancer of the bone marrow in which abnormal proteins are produced); *Ehrlichia* infection; 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 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’s 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, St. Bernards, and other breeds; cats

Mass or Space-Occupying Lesion

- Aspergillosis—German shepherd dog, Rottweiler
- Cancer—long-nosed dogs (known as “dolicocephalic breeds”)

TREATMENT

HEALTH CARE

- Blood-clotting disorder (coagulopathy)—usually inpatient
- Mass or space-occupying lesion or blood vessel (vascular) or generalized (systemic) disease—outpatient or inpatient, depending on the disease and its severity
- 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

Coagulopathy

- von Willebrand’s disease—plasma or cryoprecipitate (a product of blood plasma that has been cooled to increase levels of clotting factors) for acute 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
- Liver disease and disseminated intravascular coagulopathy (DIC)—treat and support the underlying cause; plasma may be beneficial
- Discontinue all nonsteroidal anti-inflammatory drugs (NSAIDs)
- Increased levels of globulin in the blood (hyperglobulinemia)—plasmapheresis (medical process in which whole blood is removed from the body, the blood cells are separated from the fluid portion of the blood and then are put into a sterile fluid and transfused back into the body)
- Increased number of red blood cells (known as “polycythemia”)—phlebotomy (medical procedure in which whole blood is removed from the body)

Mass or Space-Occupying Lesion

- Radiation therapy—nasal tumors; various response rates depending on tumor type
- Removal of foreign body

ACTIVITY

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

DIET

- Depends on underlying cause
- Weight reduction and sodium restriction may be indicated in treatment of high-blood pressure (hypertension)

SURGERY

- Removal of foreign body
- 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 drugs may be used for cases that do not respond to prednisone alone, such as azathioprine, cyclosporine, danazole
- Infectious disease—Rickettsial disease: doxycycline; *Babesia* infection: imidocarb
- Bone-marrow cancer—chemotherapy
- Abnormal platelet function or platelets (thrombopathia or thrombasthenia)—no treatment in most cases
- Desmopressin acetate or DDAVP is a synthetic antidiuretic hormone; DDAVP may help control bleeding owing to von Willebrand's disease
- 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 animal was exposed

Mass or Space-Occupying Lesion

- Serious bleeding—control with cage rest and acepromazine to lower blood pressure and promote clotting if the patient does not have a decrease in blood volume (known as “hypovolemia”); instillation of Neosynephrine® or dilute epinephrine into the nose may help (these drugs promote narrowing of the blood vessels, known as “vasoconstriction”)
- Bacterial infection—antibiotics; based on culture and sensitivity testing
- Fungal infection—topical treatment with clotrimazole or enilconazole; dapsone following surgery for rhinosporidiosis

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)
- 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
- Calcium channel blockers—amlodipine; diltiazem
- 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 patients with low platelet counts (thrombocytopenia)
- Blood-clotting (coagulation profile) for patients with blood-clotting (coagulation) factor defects
- Blood pressure for patients 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)

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 mass or space-occupying lesion; blood vessel (vascular) or generalized (systemic) disease
- May see bleeding from other areas of the body if nose bleed related to blood-clotting disorder (known as “coagulopathy”)