BRUISING, PETECHIA, ECCHYMOSIS

BASICS

OVERVIEW

- "Bruising" is an injury to the skin in which blood vessels are broken, leading to discoloration of the tissues from the presence of red-blood cells; "petechia" is a small, pinpoint area of bleeding; "ecchymosis" is a bruise or purplish patch under the skin or moist tissues of the body (known as "mucous membranes"), due to bleeding
- Bruises, petechia, or ecchymoses may appear spontaneously or following minimal trauma
- "Thrombocytopenia" is the medical term for low platelet count; "platelets" and "thrombocytes" are names for the normal cell fragments that originate in the bone marrow and travel in the blood as it circulates through the body; platelets act to "plug" tears in the blood vessels and to stop bleeding
- "Thrombocytopathy" is the medical term for any bleeding disorder that occurs due to a malfunction of the platelets
- "Clotting factors" are components in the blood involved in the clotting process—the clotting factors are identified by Roman numerals, I through XIII

GENETICS

- Immune-mediated low platelet count in the blood (thrombocytopenia) is suggested to have a genetic basis, because of the high number of cases in cocker spaniels, toy poodles, and Old English sheepdogs

SIGNALMENT/DESCRIPTION of ANIMAL

Species

- Dogs
- Less common in cats

Breed Predilections

- Doberman pinschers and Scottish terriers are more likely than other breeds to have von Willebrand deficiency; many other breeds have von Willebrand's disease; von Willebrand's disease is a primary bleeding defect caused by low levels of von Willebrand's factor or decreased function of existing von Willebrand's factor; von Willebrand's factor is a type of protein that binds to platelets, causing them to crowd or mass together (aggregate) and to adhere to one another to stop bleeding—if the levels of von Willebrand's factor are low or if the existing von Willebrand's factor does not function normally, the platelets do not aggregate and adhere to one another and bleeding is not stopped
- Immune-mediated low platelet count in the blood (thrombocytopenia)—cocker spaniels, toy poodles, and Old English sheepdogs
- Certain breeds have recognized specific bleeding disorders that occur due to a malfunction of the platelets (thrombocytopathies), such as the basset hound, spitz, otter hound, Great Pyrenees, American cocker spaniel, boxer, and the Persian cat

Mean Age and Range

- Middle-aged female dogs are at increased risk

Predominant Sex

- Middle-aged female dogs

SIGNS/OBSERVED CHANGES in the ANIMAL

- Bruising
- Small, pinpoint areas of bleeding (petechiae) in the skin or moist tissues of the body
- Purplish patch under the skin or moist tissues of the body (ecchymosis)
- Other signs based on underlying cause

CAUSES

Low Platelet Count (Thrombocytopenia)

- Immune-mediated thrombocytopenia—unknown cause (so called "idiopathic disease"); drug-induced thrombocytopenia (such as antibiotic-induced thrombocytopenia); secondary to cancer; and infection-induced thrombocytopenia (secondary to viral, rickettsial, bacterial, protozoal or fungal infection)
- Infectious thrombocytopenia, such as seen with ehrlichiosis, Rocky Mountain spotted fever (RMSF), babesiosis, leptospirosis, feline infectious peritonitis (FIP), feline leukemia virus (FeLV) infection, or cytauxzoonosis
- Bone-marrow suppression, leading to low red-blood cell, low white-blood cell, and/or low platelet counts, such as from estrogen toxicity or chemotherapy
- Bone-marrow infiltration of abnormal cells, as seen with certain cancers (such as multiple myeloma or lymphoma)
- Sequestration of platelets in the liver and/or spleen secondary to cancer or twisting of the organ (known as "torsion")
- Consumption of platelets, such as in disseminated intravascular coagulopathy or "DIC" (a blood-clotting disorder) or recent extensive bleeding, as seen with rodenticide poisoning

Abnormal Function of the Platelets (Thrombocytopathy)

• Congenital (present at birth) or acquired (condition that develops sometime later in life/after birth) disorders affecting platelet adhesion or aggregation

Blood-Vessel (Vascular) Disease

• Inflammation of blood vessels (known as "vasculitis") secondary to infection, such as with Rocky Mountain spotted fever (RMSF) or feline infectious peritonitis (FIP)
• Immune-mediated inflammation of blood vessels (vasculitis)

Clotting Factor Deficiency

• Usually do not see small, pinpoint areas of bleeding (petechiae) or purple patches (ecchymoses); most common clinical sign seen is bleeding into body cavities and/or joints

RISK FACTORS

• Severe von Willebrand's disease is seen in German shorthaired pointers, Shetland sheepdogs, Scottish terriers and Chesapeake Bay retrievers; von Willebrand's disease is a primary bleeding defect caused by low levels of von Willebrand's factor or decreased function of existing von Willebrand's factor; von Willebrand's factor is a type of protein that binds to platelets, causing them to crowd or mass together (aggregate) and to adhere to one another to stop bleeding—if the levels of von Willebrand's factor are low or if the existing von Willebrand's factor does not function normally, the platelets do not aggregate and adhere to one another and bleeding is not stopped
• Previous treatment with nonsteroidal anti-inflammatory drugs (NSAIDs)
• Recent vaccination has been suggested as a risk factor for immune-mediated low platelet count (thrombocytopenia)

TREATMENT

HEALTH CARE

• Usually as an inpatient, until a definitive diagnosis has been made
• Discontinue any medications that may alter platelet function (such as aspirin and other nonsteroidal anti-inflammatory drugs [NSAIDs])
• Discontinue medication that is associated with immune-mediated low platelet counts (thrombocytopenia), such as trimethoprim-sulfa in dogs or methimazole in cats
• Maintain fluid volume with a balanced electrolyte solution
• Avoid injections under the skin (known as "subcutaneous injections") and into the muscle (known as "intramuscular injections") as well as drawing blood from the jugular vein
• Blood or platelet transfusions may be necessary and life saving before a definitive diagnosis is been made (ensure blood samples are collected prior to transfusion for any diagnostic testing)
• No specific treatment is available for disorders characterized by abnormal function of platelets that are present at birth (known as "congenital thrombocytopathies"), other than desmopressin acetate (DDAVP), which can be used for type I von Willebrand's disease to help control bleeding
• Acquired (condition that develops sometime later in life/after birth) disorders affecting platelet function (thrombocytopathies)—underlying disease needs to be corrected
• Inflammation of blood vessels (vasculitis)—underlying disease needs to be treated

ACTIVITY

• Minimize activity to reduce risk of even minor trauma

MEDICATIONS

• Depend on underlying diagnosis

FOLLOW-UP CARE

PATIENT MONITORING

• Depends on underlying diagnosis
• Daily platelet count for patients with low platelet counts (thrombocytopenia), until an adequate response is seen

POSSIBLE COMPLICATIONS

• Signs of disease caused by bleeding into the brain, gastrointestinal tract, or other organs
• Shock caused by blood loss
• Death

EXPECTED COURSE AND PROGNOSIS

• Depend on underlying diagnosis