

Figure 4-27

Canine blood, RBC ghosts. Several RBCs are noted that have almost no hemoglobin within their cytoplasm. Ghost RBCs usually indicate intravascular lysis of RBC which can occur with immune-mediated disease, Heinz body hemolysis, or with fragmentation injury (100x).

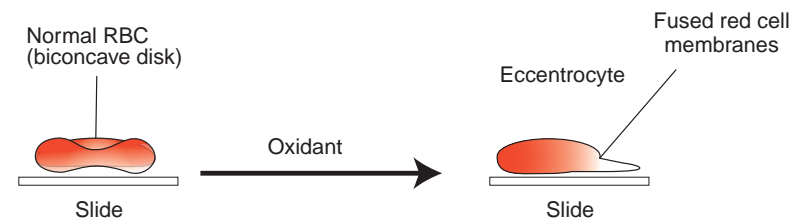
- ▶ Autoagglutination on blood films is seen as three-dimensional clumping of erythrocytes. This may be confused with rouleaux formation.
- ▶ Autoagglutination can be distinguished from rouleaux by preparing and examining a saline-diluted wet preparation.
 - Place 1 drop of EDTA-blood on a slide.
 - Add 2 drops of isotonic saline.
 - Coverslip and examine. If clumping is present, autoagglutination is confirmed.

Hemolytic Disease: Heinz Body Anemia

- ▶ Occurs in dogs and cats
- ▶ Pathogenesis:
 - Circulating oxidants act on red cell hemoglobin at two primary sites: the sulfhydryl containing amino acids in globin, and the iron moiety.
 - Oxidation of globin leads to precipitation and the formation of Heinz bodies.
 - Oxidation of iron leads to methemoglobinemia.
 - Methemoglobinemia and Heinz bodies may occur in the same patient but one form is generally predominant.
 - Heinz body formation is most prevalent and easiest to recognize.

- ▶ Most cases of Heinz body hemolytic anemia are the result of ingestion of oxidizing substances such as onions or the action of oxidizing drugs such as acetaminophen (Figure 4-28).
- ▶ Heinz bodies are precipitates of oxidized hemoglobin.
 - They often become fixed to the red cell membrane and are recognized as nose-like projections on the red cell surface.
 - Cells from which Heinz bodies have been removed (torn away) may also be observed; these are known as bite cells.
- ▶ Eccentrocytes are also commonly observed in Heinz body hemolytic anemia.
 - Eccentrocytes are red cells which lack central pallor.
 - All of the hemoglobin is concentrated at one pole of the cell.
 - At the other pole is a small area of unstained cytoplasm bound by a distinct cell membrane.
- ▶ Eccentrocytes form when oxidation of the red cell membrane occurs. This leads to fusion of opposing sites on the red cell membrane which pushes the hemoglobin peripherally.

Side View



Top View

