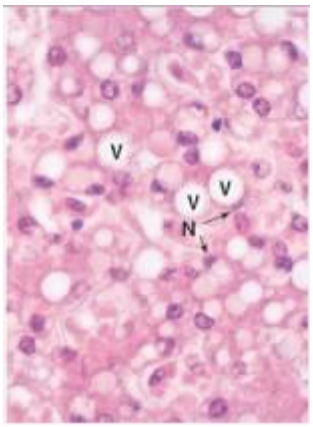
Young: Wheater's Basic Pathology, 5th Edition

Chapter 01: Cellular responses to injury

Test Bank

Multiple Choice

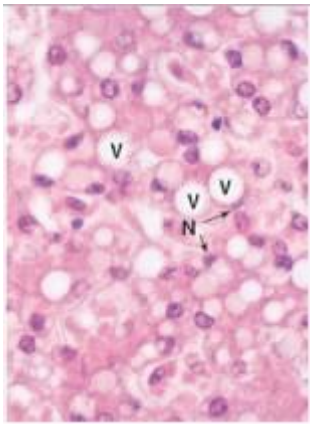
1. The structure designated by the "V" in the accompanying photomicrograph of liver likely contains which one of the following substances during life?



A. Air
B. DNA
C. Lipid
D. Lysozyme
E. RNA

ANSWER: C. The vacuole contained lipid during life. Routine tissue processing dissolves the fat, thus leaving an empty vacuole. See also Fig. 1.6 and related text.

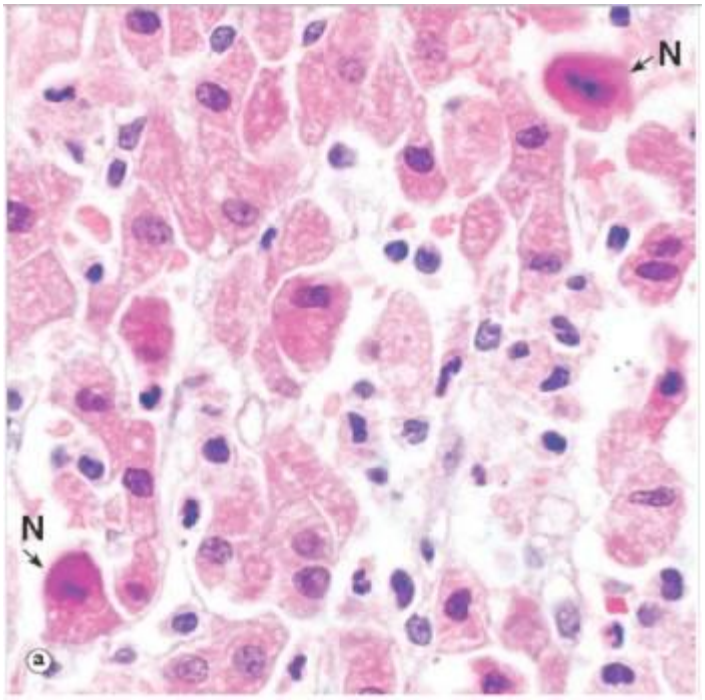
2. The structure designated by the "V" in the accompanying photomicrograph of liver is formed by which one of the following pathophysiologic mechanisms?



A. Apoptosis
B. Dilation of endoplasmic reticulum
C. Hydropic change
D. Impaired metabolism of fatty acids
E. Necrosis

ANSWER: D. The vacuole contained lipid during life. Routine tissue processing dissolves the fat, thus leaving an empty vacuole. It is most commonly seen in the liver due to the impaired metabolism of fatty acids, often because of an exogenous toxin, commonly alcohol (ethanol). See also Fig. 1.6 and related text.

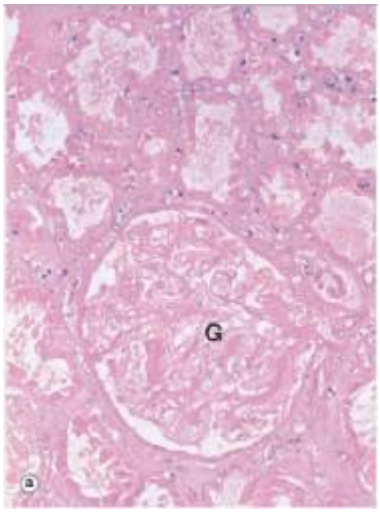
3. The nuclei in the liver cells designated with an "N" in the accompanying photomicrograph appear abnormal. Which one of the following terms best describes their appearance?



A. Acidophilic
B. Eosinophilic
C. Vacuolated
D. Karyolytic
E. Pyknotic

ANSWER: E. The nuclei are more basophilic than surrounding cells (the opposite of acidophilic or eosinophilic). This darkening is caused by progressive chromatin dumping, perhaps due to lowered pH. This is an irreversible change, and the cell is considered necrotic (i.e. dead). See also Fig. 1.7a and related text.

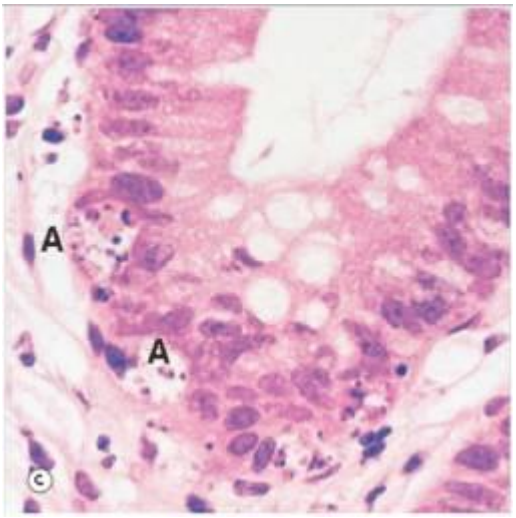
4. A renal glomerulus (G) and surrounding tubules are shown in the accompanying photomicrograph. Which one of the following is the best description of the histopathology seen?



A. Absence of nuclei
B. Acute inflammation
C. Caseation necrosis
D. Dissolution of underlying organ structure
E. Pyknosis

ANSWER: A. Absence of nuclei is the correct answer. In coagulative necrosis, one expects that the underlying structure of the organ will be preserved (at least until it can be resorbed by macrophages). Pyknosis is not present, because the nuclei have already undergone karyolysis. See also Fig. 1.8a and related text.

5. The structure labelled "A" in the accompanying photomicrograph of colonic mucosa represents which one of the following processes?



A. Apoptosis
B. Metaplasia
C. Mitosis
D. Necrosis
E. Neoplasia

ANSWER: A. The photomicrograph depicts apoptotic bodies, seen in the process of apoptosis, or individual programmed cell death. In this particular illustration, apoptosis has resulted from graft vs host disease in a bone marrow transplant patient. See also Fig. 1.9c and related text.