




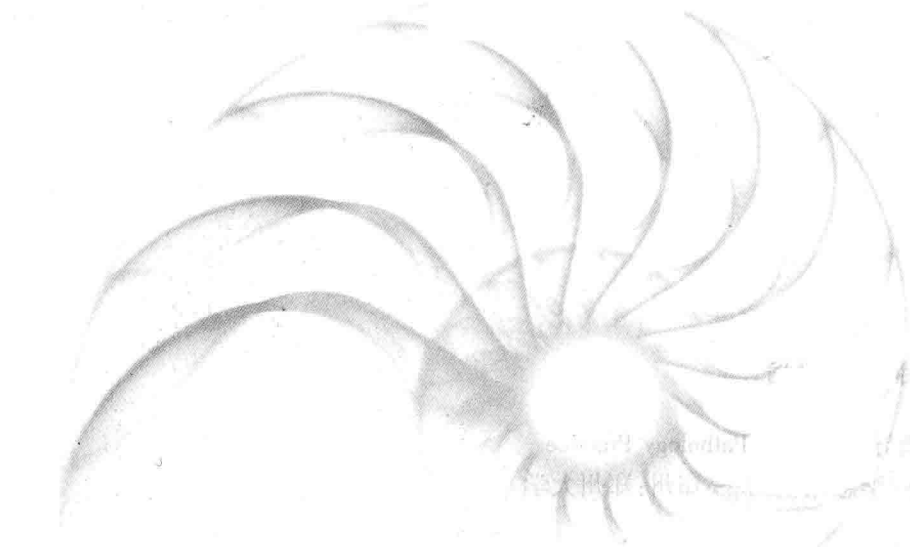
GUIDE TO PATHOLOGY PRACTICE IN THE LABORATORY

BINGLIXUE SHIXI ZHIDAO

病理学实习指导

○主编 李惠翔

 郑州大学出版社



BINGLIXUE SHIXI ZHIDAO

GUIDE TO PATHOLOGY PRACTICE IN THE LABORATORY

病理学实习指导

常州大学图书馆
主 编 李惠翔
主 编 郑乃刚
藏 书 章 新全

郑州大学出版社

图书在版编目(CIP)数据

病理学实习指导:Guide to Pathology Practice
in the Laboratory/李惠翔主编. —郑州:郑州大学
出版社,2010.1

ISBN 978 - 7 - 5645 - 0173 - 0

I. 病… II. 李… III. 病理学 - 医学院校 - 教学
参考资料 - 英文 IV. R36 - 45

中国版本图书馆 CIP 数据核字 (2009) 第 218146 号

郑州大学出版社出版发行

郑州市大学路 40 号

出版人:王 锋

全国新华书店经销

郑州文华印务有限公司印制

开本:787 mm × 1 092 mm

印张:9.25

字数:311 千字

版次:2010 年 1 月第 1 版

邮政编码:450052

发行部电话:0371 - 66966070

1/16

彩页:16

印次:2010 年 1 月第 1 次印刷

书号:ISBN 978 - 7 - 5645 - 0173 - 0 定价:47.00 元

本书如有印装质量问题,由本社负责调换

Preface

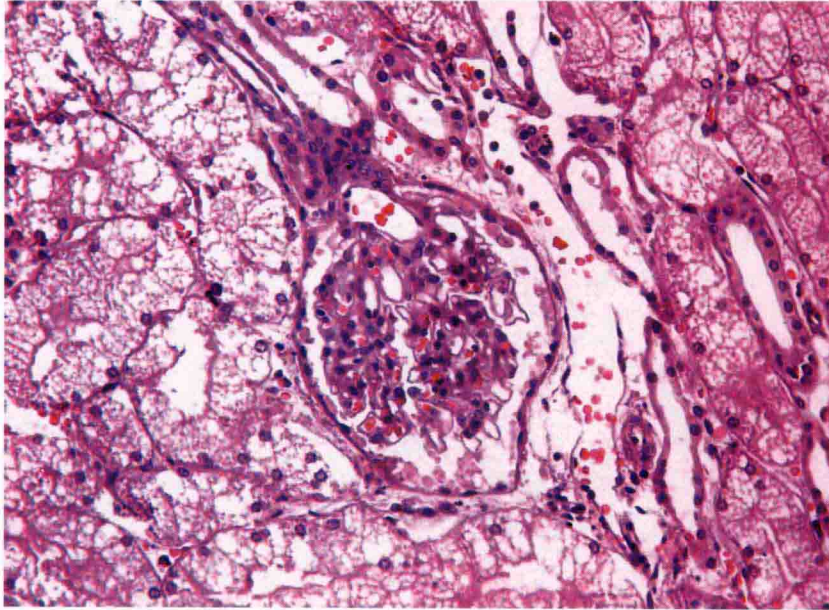
Pathology lies at the core of medical course. There is a close link between basic medical sciences and clinical medicines, including disease diagnosis, outcomes and treatments. This book covers a whole spectrum of human pathological practice with emphasis on first understanding the practice requirements/aim of each chapter, subsequent observation on corresponding pathological gross specimens and microscopic slides finally followed by questions. An abundance of illustrations in the text contributes to understanding of the more difficult rationale in pathology and to the key features of the more important diseases.

I would like to thank all those who helped to produce this book which would not only benefit overseas students, but also Chinese students/graduates who would like to read it. Any comments and suggestions to improve it are warmly welcome. This book was accomplished through the cooperation of authors and leadership support from Department of Pathology, as well College of Basic Medical Sciences of Zhengzhou University.

Yunhan Zhang

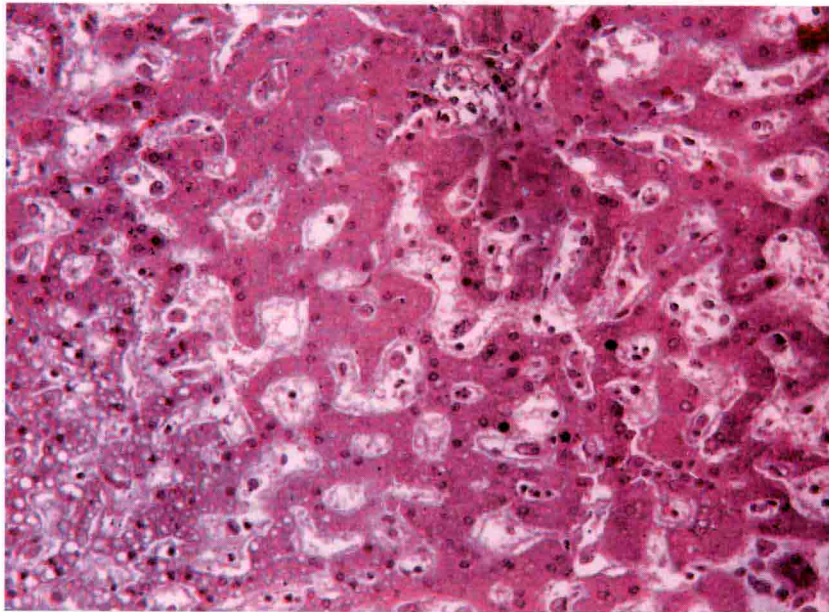
Indicative abstract

The pathology is an object based on the morphology, so the practice class is overwhelming important for the students who learn pathology. In the present book, we offer the main contents necessary in pathology practice class. The book comprises introduction and fifteen chapters, expatiating the foundational pathology practice ways. The essential lesions in general pathology and typical diseases of organ systems, include the diseases of the heart & blood vessels system, respiratory system, digestive system, male & female genital system, urinary system, endocrine system, hematopoietic & lymphoid system, infectious diseases and protozoal diseases as well. Moreover, in addition to the detailed description for each pathological changes, 100 photos of gross specimens and 30 colored photos of slide specimen are presented in the book. In each chapter, the questions designed carefully by the editors to the given specimen are very helpful for the students to get the comprehensive understanding.



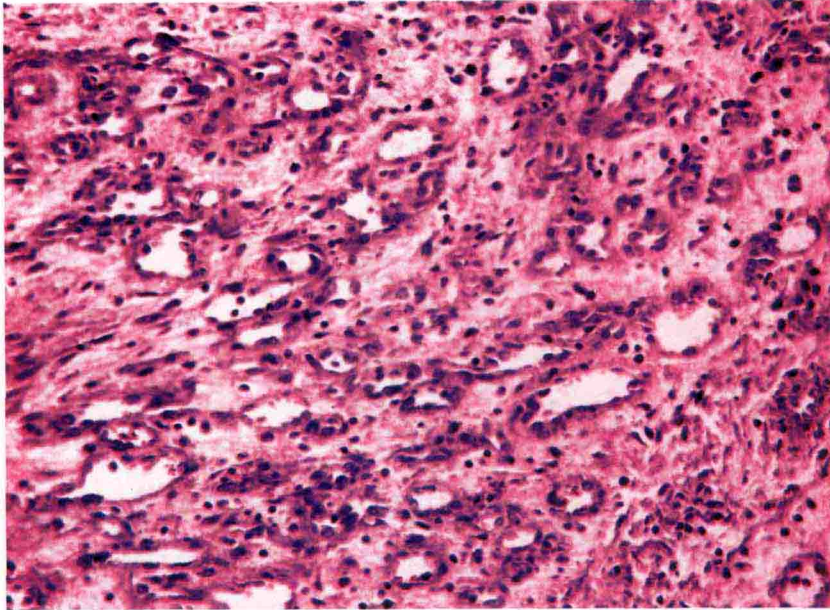
Color Fig. 2 –1 Hydropic degeneration of kidney(HE, ×400)

The epithelial cells of the renal convoluted tubule become swollen and project into the lumen of the renal tubule, resulting in renal stenosis, even obliteration.



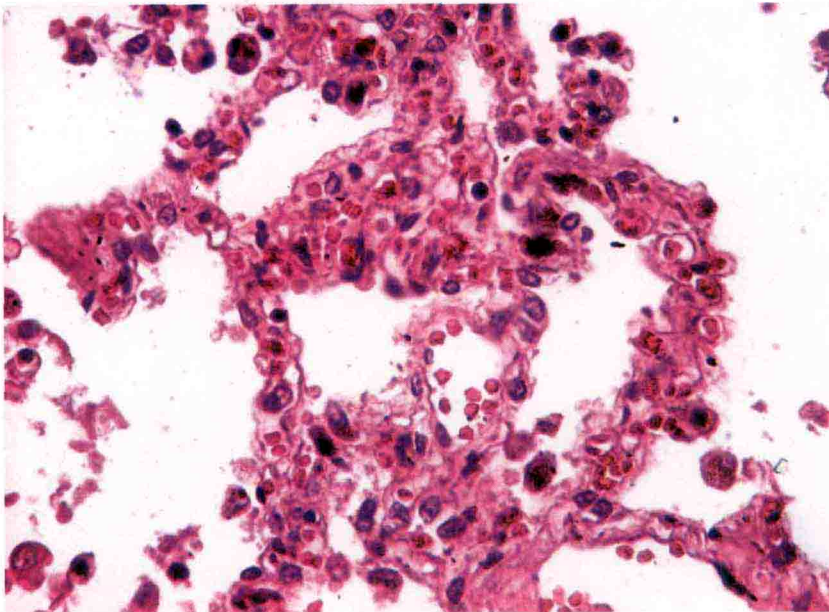
**Color Fig. 2 –2 Fatty degeneration
in the peripheral area of the hepatic lobule(HE, ×200)**

The fatty degeneration is mainly located in the peripheral region of the hepatic lobule, where lots of fat droplets are localized in the cytoplasm of the hepatocytes, and the nuclei are pressed to the cell periphery.



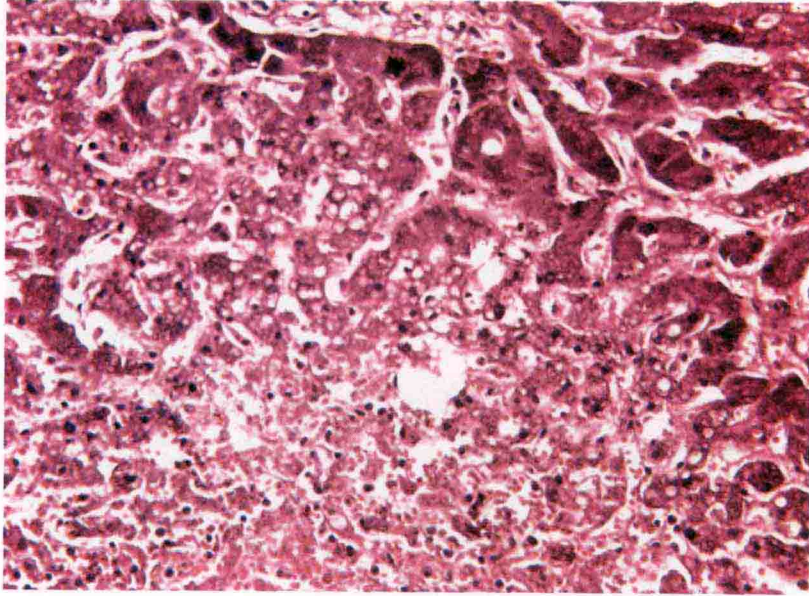
Color Fig. 3 –1 Granulation tissue(HE, ×400)

The granulation tissue is composed of fibroblasts and novel capillaries with infiltration of the inflammatory cells, including PMN, lymphocytes, macrophages and plasma cells.



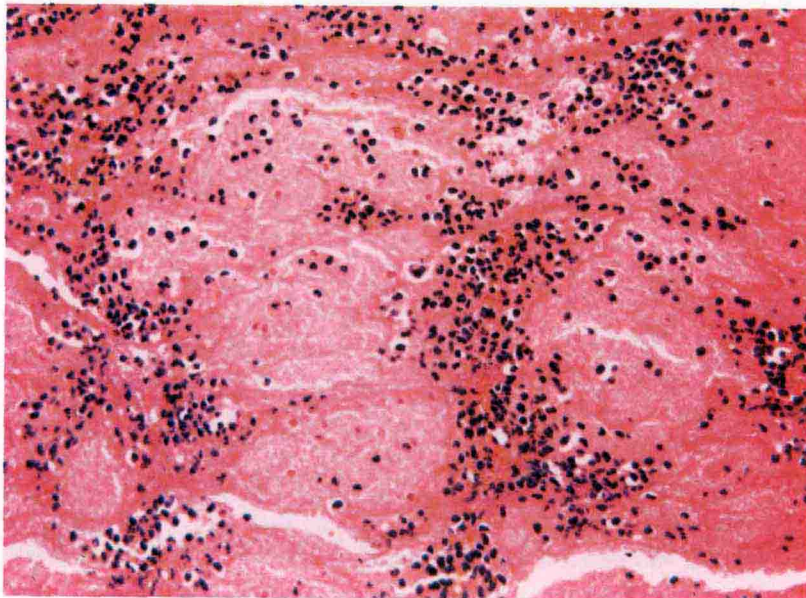
Color Fig. 4 –1 Chronic passive congestion of the lung(HE, ×400)

The alveolar wall becomes thick markedly. A small amount of exudates containing red blood cells and many phagocytes are present in the alveolar cavity.



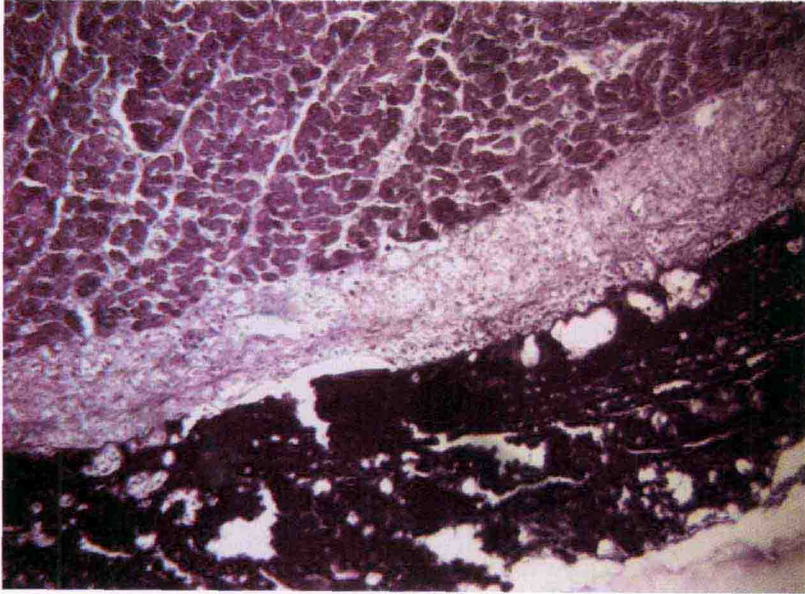
Color Fig. 4 -2 Chronic hepatic congestion(HE, ×400)

The congestion through the sinusoid expansion is more prominent with neighboring central area of the hepatic lobule. The hepatocyte cords neighboring the central vein become atrophic and obliterated.



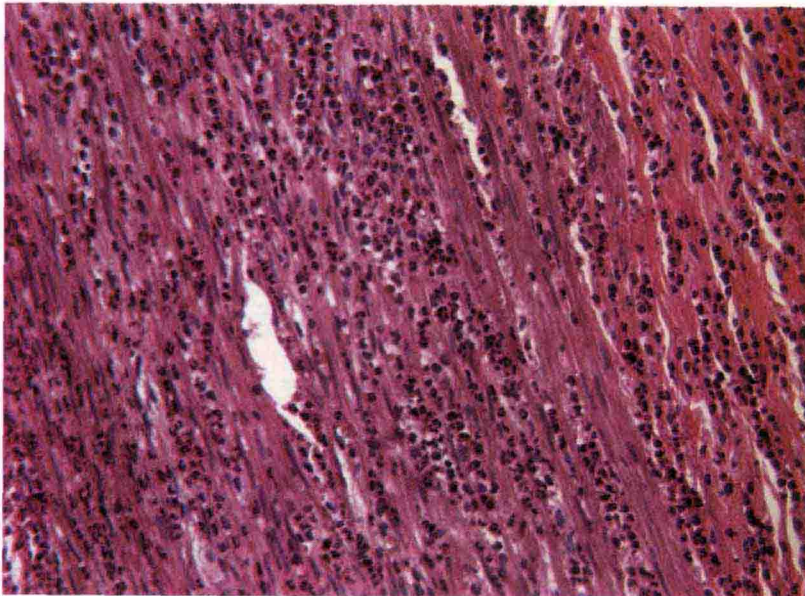
Color Fig. 4 -3 Mixed thrombus(HE, ×400)

In the thrombus the eosin - stained coagulated scaffold with attached white blood cells can be found. Between the trabeculi of the scaffold there are red blood cells and a small amount of fibrin.



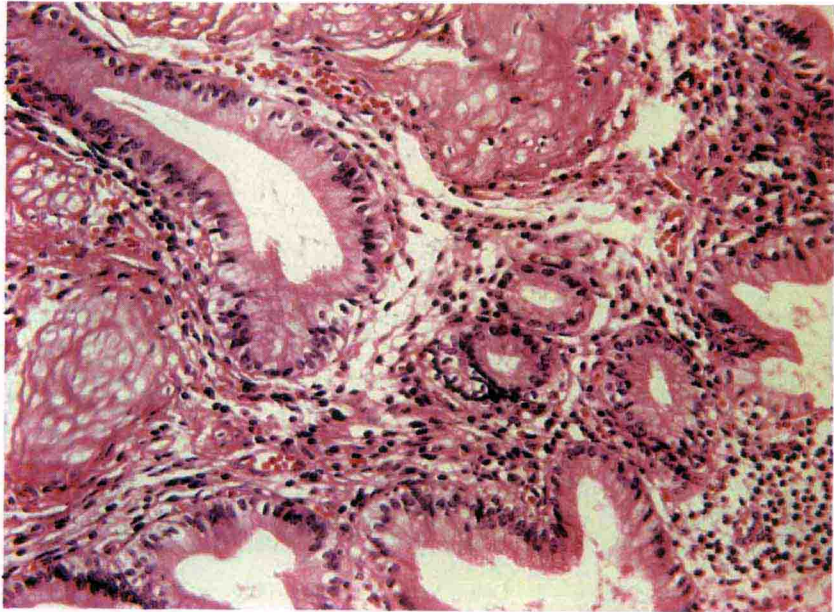
Color Fig. 5 -1 Fibrinoid carditis(HE, $\times 100$)

The inflammatory exudates(lower) attached to the pericardium(middle) are composed of interweaved eosin - stained fibrin streaks mixed with some neutrophils and erythrocytes.



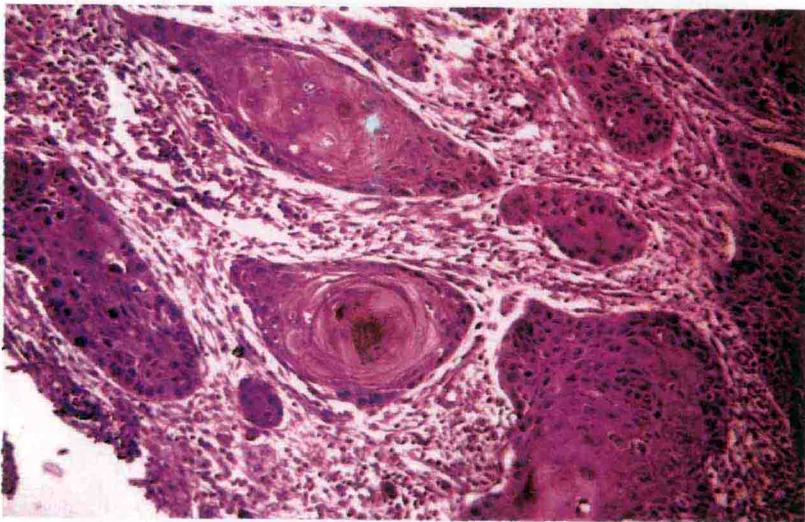
Color Fig. 5 -2 Phlegmonous appendicitis(HE, $\times 400$)

A great amount of neutrophils infiltrate into each layer of the appendix.



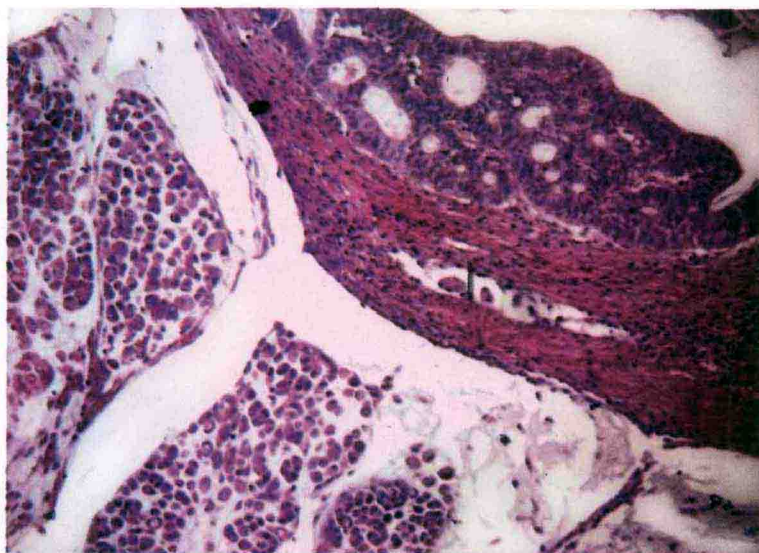
Color Fig. 5 – 3 Chronic cholecystitis(HE, × 400)

The inflammatory cells, mainly lymphocytes, infiltrate into the thick wall of the gall bladder and are distributed in the focus. The mucosa folds are increased and fuse to form adenoid structure and to infiltrate into the muscle layer.



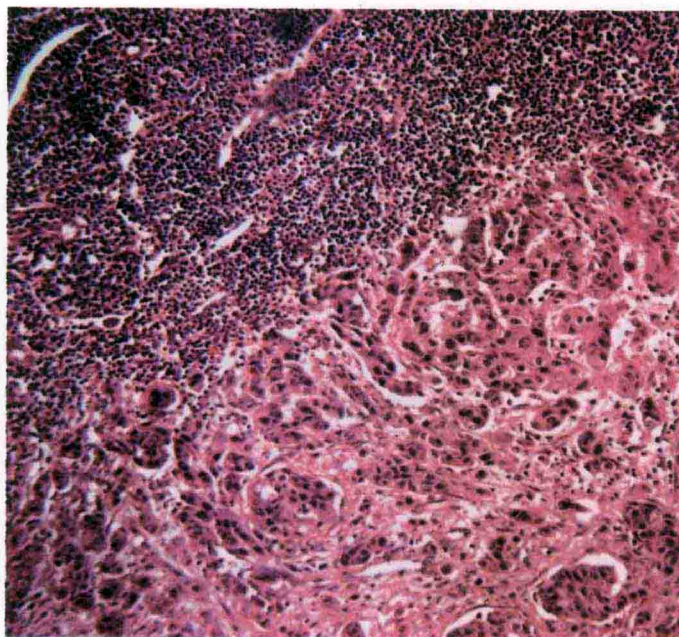
Color Fig. 6 – 1 Squamous cell carcinoma of esophagus(HE, × 200)

The periphery of the cancer nest is composed of small "basal cells", at the center of which the keratinoid material in red color is named as "cancer pearl". Between them the transitional zone is formed by the cells, similar to the prickle cells.



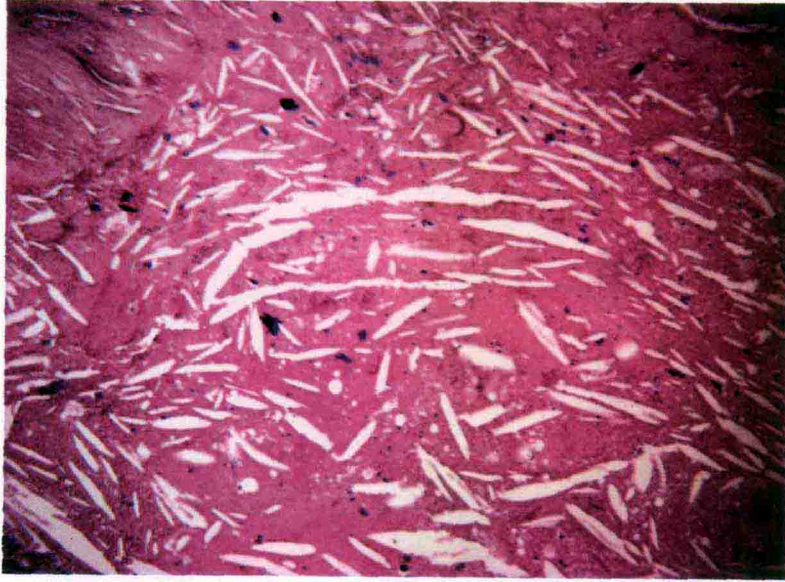
Color Fig. 6-2 Colon adenocarcinoma (HE, ×200)

The cancer cells in up-right field are arranged in tubular shape with variety of sizes and shapes, disorder and multi-laminated epithelium. The other cancer cells (down-left) are isolated with the shape mimicing a signet-ring.



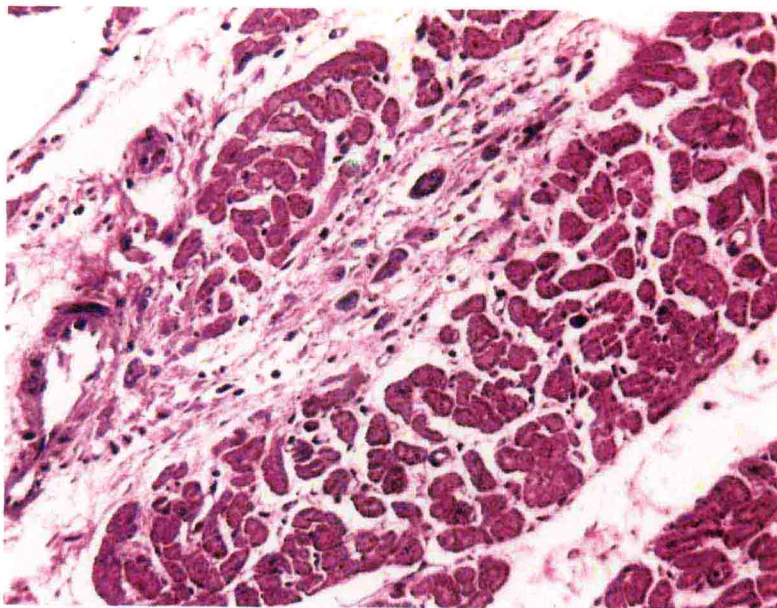
Color Fig. 6-3 Lymphatic metastasis of squamous cell carcinoma (HE, ×200)

Most of the lymphatic node structures are destroyed and replaced by the cancer tissue. The cancer tissue is formed by anaplasia squamous cells which are arranged in cords or nests.



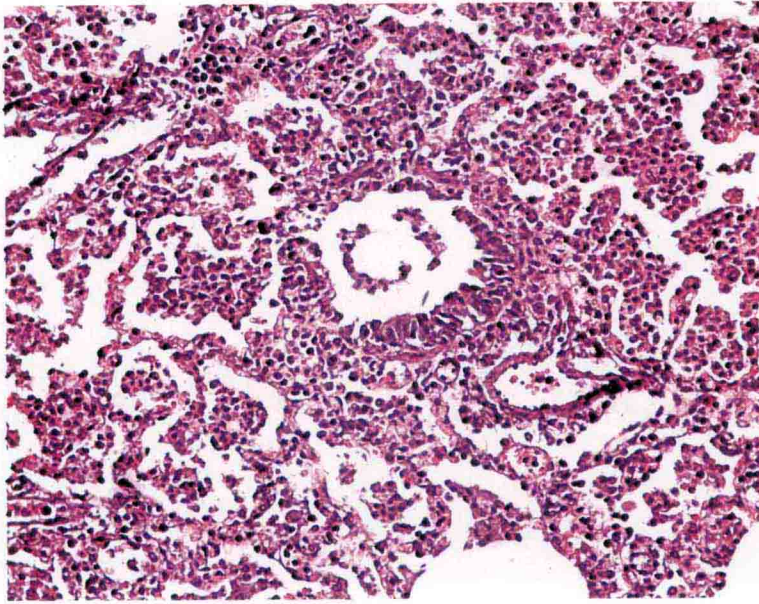
Color Fig. 7 –1 Aortic atherosclerosis(HE, ×400)

In inner layer numerous cholesterol crystals in fusiform are present, where the fibrous tissue appears mucinous degeneration in light – pink color mixed with calcified foci stained in blue color.



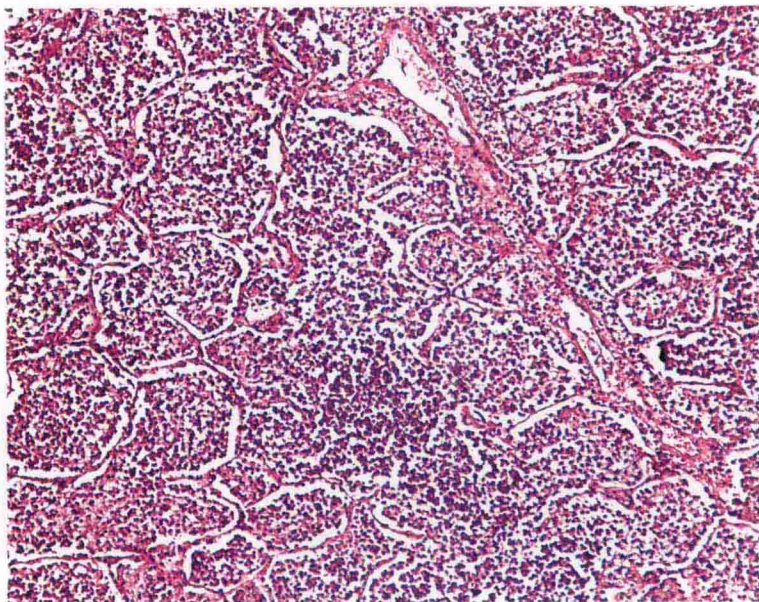
Color Fig. 7 –2 Rheumatic myocarditis(HE, ×400)

Under low power the oval or round shaped Aschoff nodules (bodies) are distributed in the interstitial tissue within the myocardium. These nodules are mainly located at the area surrounding the blood vessels.



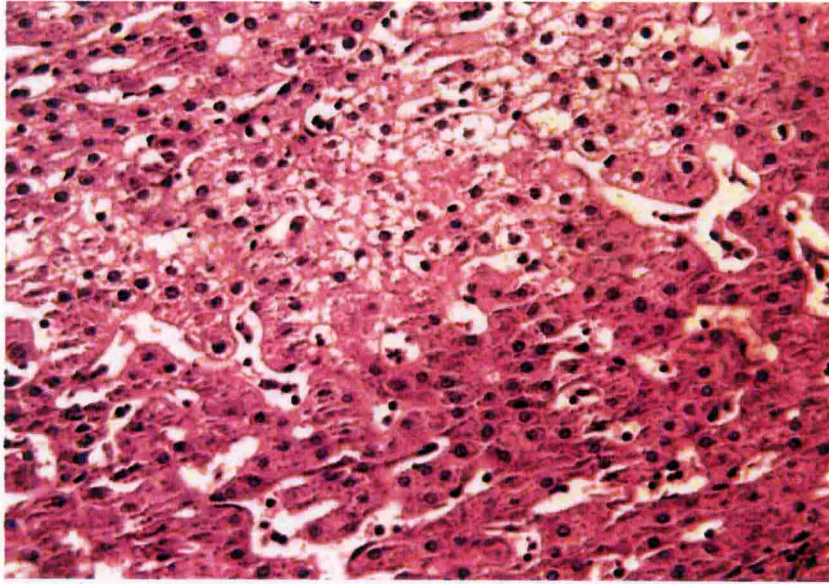
Color Fig. 8 -1 Lobular pneumonia(HE, ×400)

In the focus the small bronchi and the alveolar wall appear hyperemia with inflammatory cells infiltration, where the neutrophils, monocytes, red blood cells and inflammatory exudates are present. In some small bronchi the mucosa epithelium is necrotic and detached.



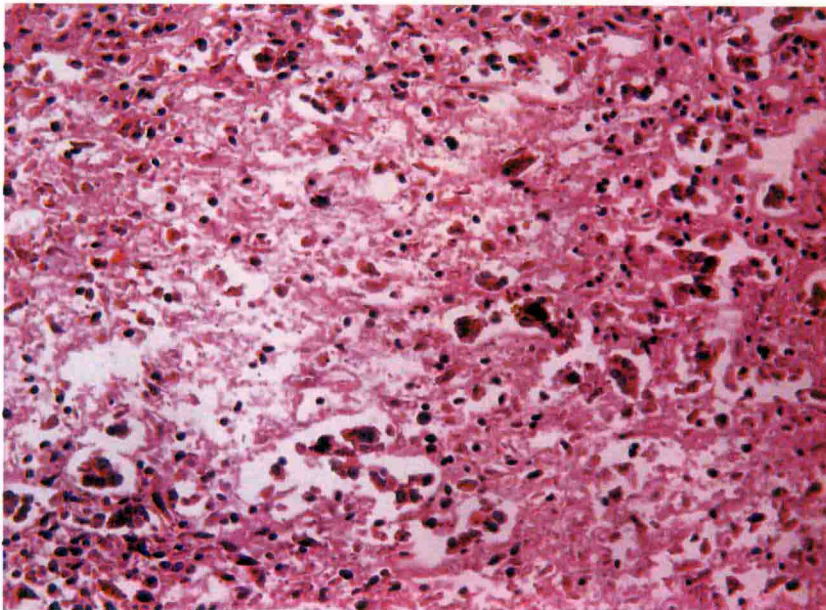
Color Fig. 8 -2 Lobar pneumonia(HE, ×400)

Under the high power the inflammatory exudates consist of pinkish - colored coagulated fibrins, neutrophiles and monocytes.



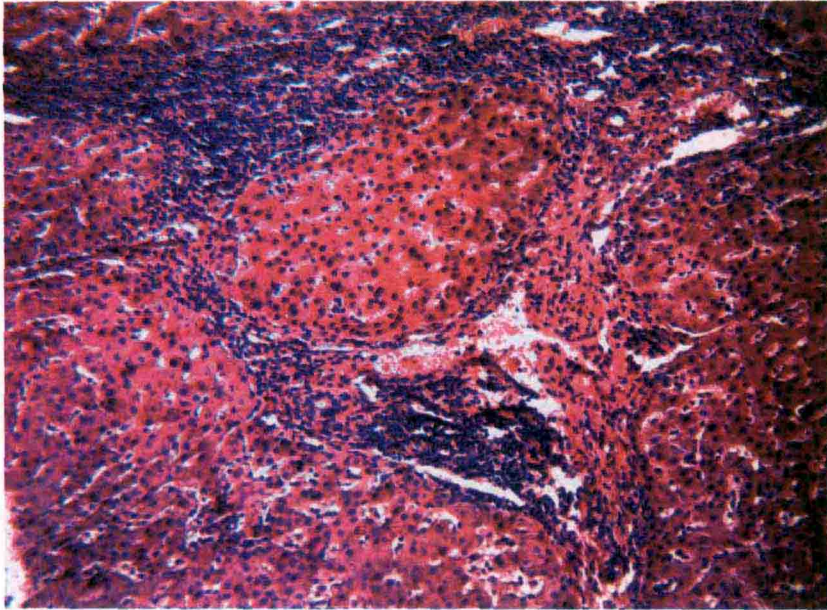
Color Fig. 9 –1 Acute viral hepatitis(HE , ×400)

Most hepatocytes appear swollen, the cytoplasm is loose and clear, and the volume of a few of hepatocytes becomes enlarged markedly, round in shape with clear cytoplasm, named as “balloon degeneration”.



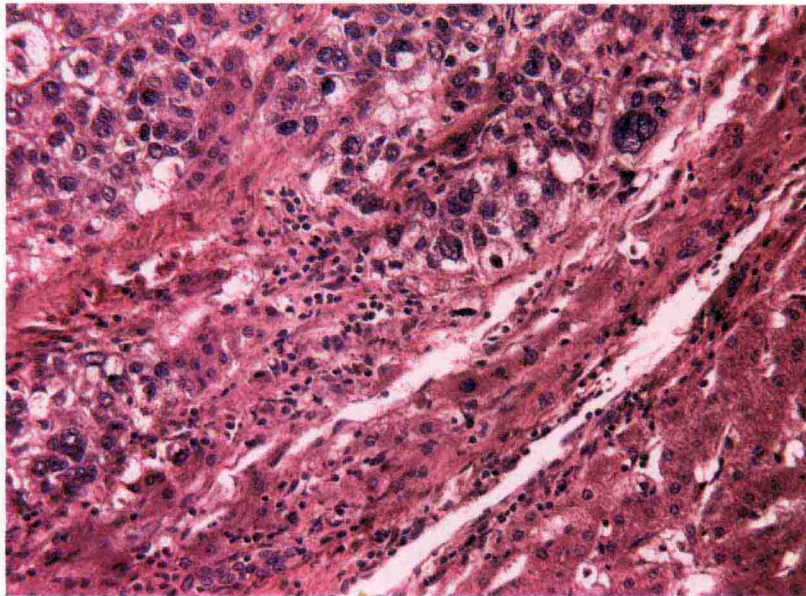
Color Fig. 9 –2 Acute severe viral hepatitis(HE , ×200)

The normal structure of lobule cannot be observed, since most hepatocytes are necrotic and obliterated.



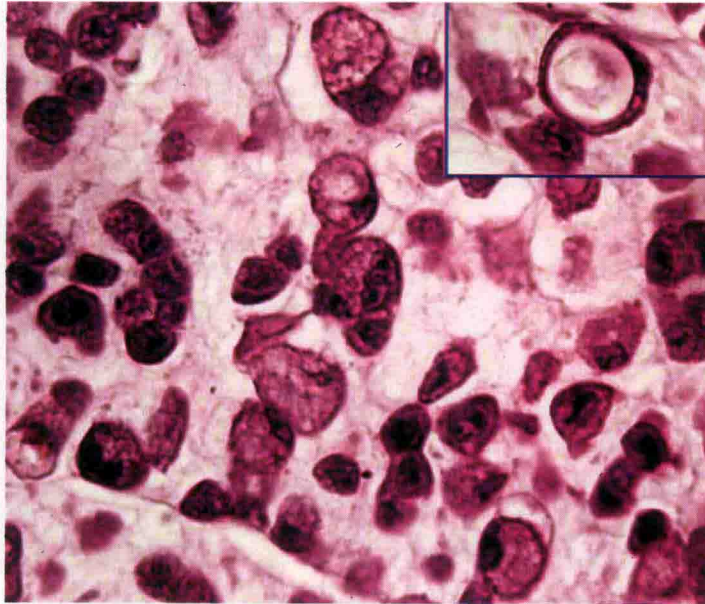
Color Fig. 9 – 3 Portal cirrhosis of liver (HE, ×200)

The pseudolobule in various sizes is surrounded by proliferating fibrous tissue. The central vein is absent in the pseudolobule, or the central localization is replaced by the peripheral.



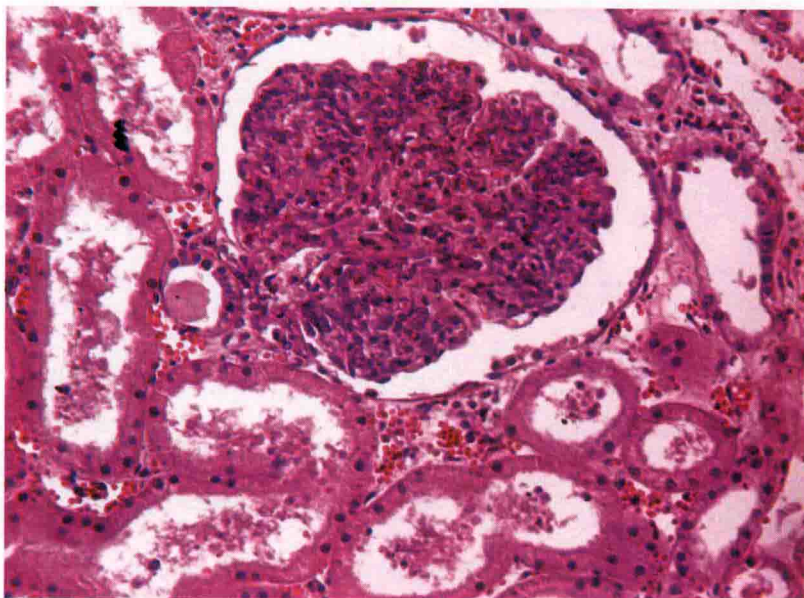
Color Fig. 9 – 4 Hepatocellular carcinoma (HE, ×400)

Some scattered cancer cell masses can be found alongside the normal hepatocytes. The cancer cell with basophilia – stained cytoplasm (*vs.* the normal hepatocytes in pink – red stained cytoplasm) and dark – stained large nucleus is characterized by apparent atypia.



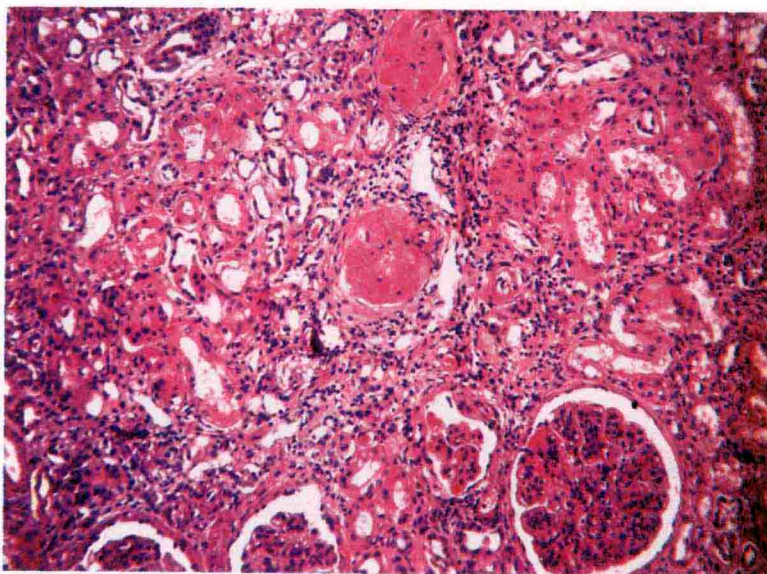
Color Fig. 9 – 5 Signet – ring carcinoma of colon (HE, ×400)

The carcinoma cell nucleus is compressed by a great amount of mucin in the cytoplasm. Based on the special feature the mucinous adenocarcinoma cell is also named as “Signet – ring cell”.



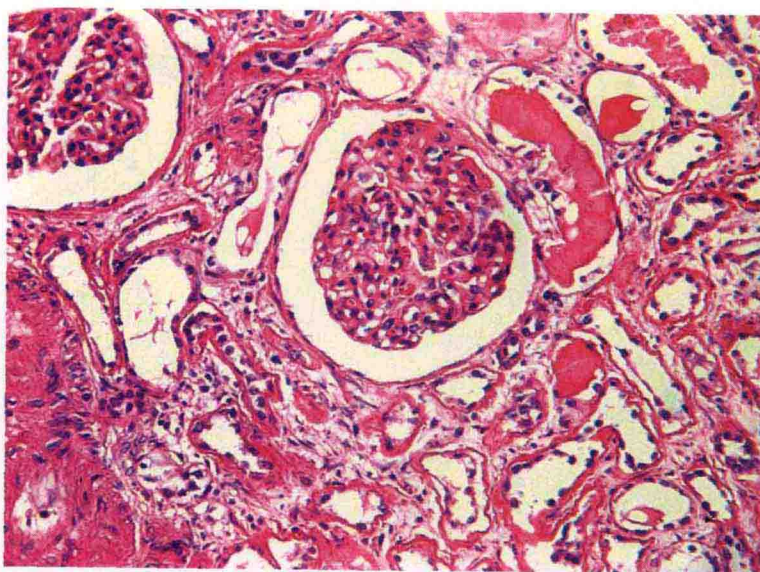
Color Fig. 11 – 1 Acute glomerulonephritis (HE, ×400)

The glomerulus volume is enlarged due to endothelial cells of glomerular capillary and mesangial cells proliferation. The red blood cells, protein exudates, and some casts are present in the lumen of the proximal convoluted tubule.



Color Fig. 11 -2 Chronic glomerulonephritis(HE, ×200)

A part of glomerular capillaries are fibrosed (fibrotic mass), and some glomeruli are glassy degenerative (glassy mass). The renal tubules appear atrophic where the interstitial tissue is infiltrated with some inflammatory cells.



Color Fig. 11 -3 Chronic pyelonephritis(HE, ×400)

Partial glomeruli are atrophic in fibrotic or glassy degeneration, and the residual glomeruli are hypertrophic in compensation. Most renal tubules are atrophic or obliterated, among them the proliferating fibrotic tissue is present. The renal tubule lumen is full of red - stained homogenous substance, similar to the feature of the thyroid follicle.