Chapter 2

BILE DUCT DISEASES

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The bile ducts are important structures that connect the liver and gallbladder to the small intestine. Diseases of the bile ducts can lead to a variety of complications, including jaundice, infection, and liver damage. In this section, we will discuss common bile duct diseases and their management.

CHOLEDOCHOLITHIASIS

The common bile duct is a tube-like structure that transports bile to the small intestine from the liver and gallbladder. Bile is a fluid that facilitates lipid digestion. Gallbladder stones, also known as gallstones, can sometimes travel down the common bile duct and cause a blockage [1].

Choledocholithiasis can affect individuals of any age, but it is more prevalent in women and those older than 60. Certain risk factors can increase a person's likelihood of developing choledocholithiasis even though its precise cause is unknown. A history of gallstones, obesity, abrupt weight loss, and certain medical conditions, such as Crohn's disease and cirrhosis of the liver, are among these risk factors. In certain regions of East Asia, particularly Southeast Asia and the Far East, there is a correlation between parasitic infection and choledocholithiasis. In particular, *Clonorchis sinensis* is known to induce these infections. *Clonorchis sinensis* is a parasite that inhabits the human bile ducts and gallbladder. This parasite is found in freshwater fish that are ingested raw or undercooked by humans.An infection with *Clonorchis sinensis* can increase the risk of choledocholithiasis by causing the parasite to proliferate in the bile ducts and thereby causing obstructions in these ducts. By causing inflammation and blockage in the bile ducts, parasites contribute to the formation of stones. In addition, the irritation in the bile ducts caused by the parasite can increase the risk of infection.

Depending on the severity of the obstruction, the symptoms of choledocholithiasis can vary. In mild cases, there may be no symptoms, whereas

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such as antimitochondrial antibody (AMA). These autoantibodies play a crucial role in the pathogenesis of PBC, which results in progressive deterioration of the bile ducts and cholestasis.

A comprehensive evaluation of clinical symptoms, laboratory tests, and imaging investigations is required to diagnose PBC. Patients frequently exhibit nonspecific symptoms including fatigue, pruritus, and jaundice. In most cases, laboratory analyses reveal elevated levels of alkaline phosphatase (ALP), gamma-glutamyl transferase (GGT), and bilirubin, as well as AMA. To confirm the diagnosis and assess the extent of fibrosis and inflammation, a liver biopsy may be administered.

The treatment of PBC seeks to reduce the disease's progression, alleviate symptoms, and prevent complications. Ursodeoxycholic acid (UDCA) has been shown to improve liver function, delay disease progression, and increase patient survival. Additional therapies, such as immunosuppressive agents or obeticholic acid, may be considered in a subset of patients, notably those who do not respond adequately to UDCA. Antipruritics, fat-soluble vitamin supplementation, and management of associated complications such as osteoporosis and portal hypertension provide symptomatic relief.

PBC is characterized by inflammation and fibrosis of the intrahepatic bile ducts. Rapid diagnosis and early treatment initiation are crucial for disease management and enhancing patient outcomes. Continued research and progress in elucidating the pathogenesis of PBC will contribute to the development of more targeted therapies and individualized approaches for patients with this condition.

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