HEPATOLITHIASIS – A REPORT OF TWO CASES

K. A. BOATENG
Department of Pathology, School of Medical Sciences, Kwame Nkrumah University of Science and Technology, Private Mail Bag, Kumasi

SUMMARY
The presence of gallstones within the intrahepatic bile ducts has not been previously reported in the medical literature in Ghana. Two cases encountered during routine autopsies are reported. The history and findings of these two cases are similar to those in Eastern Asia where the disease is more common. The difficulty in clinical diagnosis is highlighted and the pathogenesis and management are briefly discussed. Hepatolithiasis should be considered in the differential diagnosis of the combination of jaundice, fever and right upper quadrant abdominal pain in Ghanaians.

Keywords: Hepatolithiasis, gallstones, jaundice.

INTRODUCTION
Cholelithiasis and choledocholithiasis are not uncommon in Ghana although incidence are quite low compared to those in Western communities. Hepatolithiasis, however, has not been reported in the Ghana literature. The condition has been known since the sixteenth and seventeenth centuries. It is not common in the Western countries but occurs more frequently in East Asia, including Korea, China, Hong Kong, Japan, Taiwan, the Philippines, Malaysia and Indonesia. In Taiwan, where the incidence is highest, 30% of all patients with gallstone disease have intrahepatic stones. In Latin America, incidence of 7.7% in Columbia and 2.3% in Brazil are found in cases with autopsy diagnosis of cholelithiasis. Hepatolithiasis offers a serious challenge because of its intractable course. The purpose of this paper is to present two cases of hepatolithiasis in Ghanaians, encountered during autopsy.

CASE 1
A 46 year old woman who had been receiving treatment for jaundice and pain in the upper abdomen over a long period was admitted to the medical unit at Korle Bu Teaching Hospital in 1974. The most significant clinical findings were raised serum alkaline phosphatase, alanine and aspartate aminotransferases and total bilirubin levels. She also complained of pruritus. She was managed as hepatitis progressing to cirrhosis and died during a long admission.

Autopsy showed a moderately jaundiced middle-aged woman of average height. The liver was enlarged and diffusely nodular with a greenish hue. On sectioning, there was, in both major lobes, widespread dilatation of intrahepatic bile ducts which were packed with stones. There were no stones in the extrahepatic biliary tree or the gallbladder. No significant findings were seen in other organs.

CASE 2
History was obtained from close relatives and the police. The deceased was a 36 year old farm labourer who was known to have chronic ill-health and had been complaining of upper abdominal pain. He was also known to be jaundiced. Four days prior to the request for autopsy, he had been found dead in a bush on the outskirts of the town. The police suspected foul play and a coroner’s autopsy was requested.

Post mortem examination showed the decomposing body of a young male adult who was jaundiced. The liver was enlarged and decomposing. On sectioning, the intrahepatic bile duct system was filled with dark brown faceted stones (Figure 1).

Figure 1 Stones in the intrahepatic bile duct system.
There was dilatation of the ducts proximal to the stones. The rest of the body did not show any significant abnormalities.

**DISCUSSION**

The diagnosis of hepatolithiasis can be difficult particularly in areas where the disease is uncommon. The symptoms are nonspecific, the most frequent being vague upper abdominal or right upper quadrant pain which may be colicky. Jaundice and fever can be seen in half of the cases but, in advanced cases, Charcot’s triad of abdominal pain, fever and jaundice is seen more frequently. An enlarged liver can occasionally be palpated. Symptoms may be severe with mental confusion and shock. Abnormal liver function tests are encountered in 80% of cases the most frequent being elevated alkaline phosphatase, leucine aminopeptidase and gamma glutamyl transferase. However, with recent advances in imaging techniques of the hepatobiliary system the exact pathology such as the presence of stones, their location, accompanying strictures and dilation of intrahepatic ducts can be identified with certainty.

Intrahepatic stones are predominantly made of calcium bilirubinate. In the two cases being reported the stones were not analysed. However, their dark brown colour suggests that they were calcium bilirubinate stones. The formation of intrahepatic gallstones may be attributed to two factors, ethnic and environmental. The presence of ethnic factors is apparent from the great difference in incidence of hepatolithiasis between Western and East Asian countries. In Singapore, where Chinese, Malays and Aborigines live, hepatolithiasis affects mainly the Chinese population.

Among environmental factors considered important are infections with the parasites *Ascaris lumbricoides* and *Clonorchis sinensis*. The role of ascaris in the formation of stones in the two cases being presented is unknown. The most important factor responsible for formation of intrahepatic stones is thought to be bacterial infection. Laboratory investigations in one study revealed that the bile of patients with calcium bilirubinate stones had almost invariably been infected with *Escherichia coli*. Many enteric bacteria produce a large amount of the enzyme β-glucuronidase. This enzyme hydrolyses bilirubin glucuronide in the bile deconjugating it into free bilirubin and glucuronic acid. The deconjugated bilirubin then combines with calcium ions to form insoluble calcium bilirubinate. The similarity between the bacteria found in intrahepatic stones and the gut flora has led to the suggestion that the gut is probably the source of bacteria. The route of transmission in uncertain and whether the bile ducts or the liver of patients with this disease have lowered resistance to bacterial colonization is not known.

The history and findings of these two cases are similar to those in East Asia where the disease is common. Hepatolithiasis should therefore be considered in the differential diagnosis of any patient with jaundice, fever and right upper quadrant pain and tenderness. After preliminary blood tests to confirm the presence of infection and obstructive jaundice, ultrasonography of the liver and gall bladder should be performed. If diagnosis is confirmed or strongly suspected on clinical grounds, conservative treatment, consisting of nil per month, intravenous fluids and antibiotics, should be started. The patients who recover may require surgery after further investigations to obtain complete information about the biliary system.

**ACKNOWLEDGEMENTS**

I am grateful to Mr. J. M. Adu, Librarian, School of Medical Sciences, University of Science and Technology, for his invaluable help and Mr. Pius Gammette for typing the manuscript.

**REFERENCE**


---

![Advertisement](Image)

**ADVERTISE**

**IN THE**

**GHANA MEDICAL JOURNAL**

**FOR**

**SUCCESSFUL**

**BUSINESS**