



**ORIGINAL RESEARCH PAPER**

**Orthopaedics**

**A HISTOPATHOLOGICAL STUDY OF GALLBLADDER AFTER CHOLECYSTECTOMY**

**KEY WORDS:**

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**ABSTRACT**

Gall bladder disease is not an uncommon disorder. Most of the cases admitted in the hospitals require surgical intervention. Routine examination of the gall bladder after cholecystectomy shows different histopathological changes ranging from inflammation to premalignant and carcinoma. Although gall bladder disease is most often found in women, men may have this condition as well

**Introduction:**

The term gallbladder disease is used for several types of conditions that can affect your gallbladder. The gallbladder is a small pear-shaped sac located underneath your liver. Your gallbladder's main function is to store the bile produced by your liver and pass it along through a duct that empties into the small intestine. Bile helps you digest fats in your small intestine. Inflammation causes the majority of gallbladder diseases due to irritation of the gallbladder walls, which is known as cholecystitis. This inflammation is often due to gallstones blocking the ducts leading to the small intestine and causing bile to build up. It may eventually lead to necrosis (tissue destruction) or gangrene. There are many different types of gallbladder disease 1,2.

Gallstones develop when substances in the bile (such as cholesterol, bile salts, and calcium) or substances from the blood (like bilirubin) form hard particles that block the passageways to the gallbladder and bile ducts. Gallstones also tend to form when the gallbladder doesn't empty completely or often enough. They can be as small as a grain of sand or as large as a golf ball. Numerous factors contribute to your risk of gallstones. These include:

- being overweight or obese
- having diabetes
- being age 60 or older
- taking medications that contain estrogen
- having a family history of gallstones
- being female
- having Crohn's disease and other conditions that affect how nutrients are absorbed
- having cirrhosis or other liver diseases

**Cholecystitis**

Cholecystitis is the most common type of gallbladder disease. It presents itself as either an acute or chronic inflammation of the gallbladder.

**Acute cholecystitis**

Acute cholecystitis is generally caused by gallstones. But it may also be the result of tumors or various other illnesses. It may present with pain in the upper right side or upper middle part of the abdomen. The pain tends to occur right after a meal and ranges from sharp pangs to dull aches that can radiate to your right shoulder 3,4. Acute cholecystitis can also cause:

- fever
- nausea
- vomiting
- jaundice

**Chronic cholecystitis**

After several attacks of acute cholecystitis, the gallbladder can shrink and lose its ability to store and release bile. Abdominal pain,

nausea, and vomiting may occur. Surgery is often the needed treatment for chronic cholecystitis.

**Choledocholithiasis**

Gallstones may become lodged in the neck of the gallbladder or in the bile ducts. When the gallbladder is plugged in this way, bile can't exit. This may lead to the gallbladder becoming inflamed or distended.

The plugged bile ducts will further prevent bile from traveling from the liver to the intestines. Choledocholithiasis can cause:

- extreme pain in the middle of your upper abdomen
- fever
- chills
- nausea
- vomiting
- jaundice
- pale- or clay-colored stools

**Acalculous gallbladder disease**

Acalculous gallbladder disease is inflammation of the gallbladder that occurs without the presence of gallstones. Having a significant chronic illness or serious medical condition has been shown to trigger an episode 5,6,7.

Symptoms are similar to acute cholecystitis with gallstones. Some risk factors for the condition include:

- severe physical trauma
- heart surgery
- abdominal surgery
- severe burns
- autoimmune conditions like lupus
- blood stream infections
- receiving nutrition intravenously (IV)
- significant bacterial or viral illnesses

**Biliary dyskinesia**

Biliary dyskinesia occurs when the gallbladder has a lower-than-normal function. This condition may be related to ongoing gallbladder inflammation.

Symptoms can include upper abdominal pain after eating, nausea, bloating, and indigestion. Eating a fatty meal may trigger symptoms. There are usually no gallstones in the gallbladder with biliary dyskinesia.

Your doctor may need to use a test called a HIDA scan to help diagnosis this condition. This test measures gallbladder function. If the gallbladder can only release 35 to 40 percent of its contents or less, then biliary dyskinesia is usually diagnosed.

**Sclerosing cholangitis**

Ongoing inflammation and damage to the bile duct system can lead to scarring. This condition is referred to as sclerosing

cholangitis. However, it's unknown what exactly causes this disease.

Nearly half the people with this condition don't have symptoms. If symptoms do occur, they can include:

- fever
- jaundice
- itching
- upper abdominal discomfort.

Approximately 60 to 80 percent of people with this condition also have ulcerative colitis. Having this condition does increase the risk of liver cancer as well. Currently, the only known cure is a liver transplant.

Medications that suppress the immune system and those that help break down thickened bile can help manage symptoms.

**Gallbladder cancer**

Cancer of the gallbladder is a relatively rare disease. There are different types of gallbladder cancers. They can be difficult to treat because they're not often diagnosed until late in the disease's progression. Gallstones are a common risk factor for gallbladder cancer.

Gallbladder cancer can spread from the inner walls of the gallbladder to the outer layers and then on to the liver, lymph nodes, and other organs. The symptoms of gallbladder cancer may be similar to those of acute cholecystitis, but there may also be no symptoms at all.

**Gallbladder polyps**

Gallbladder polyps are lesions or growths that occur within the gallbladder. They're usually benign and have no symptoms. However, it's often recommended to have the gallbladder removed for polyps larger than 1 centimeter. They have a greater chance of being cancerous.

**Gangrene of the gallbladder**

Gangrene can occur when the gallbladder develops inadequate blood flow. This is one of the most serious complications of acute cholecystitis. Factors that increase the risk of this complication include:

- being male and over 45 years old
- having diabetes

The symptoms of gallbladder gangrene can include:

- dull pain in the gallbladder region
- fever
- nausea or vomiting
- disorientation
- low blood pressure

**Abscess of the gallbladder**

Abscess of the gallbladder results when the gallbladder becomes inflamed with pus. Pus is the accumulation of white blood cells, dead tissue, and bacteria. Symptoms may include upper right-sided pain in the abdomen along with fever and shaking chills.

This condition can occur during acute cholecystitis when a gallstone blocks the gallbladder completely, allowing the gallbladder to fill with pus. It's more common in people with diabetes and heart disease.

**MATERIALS AND METHODS**

Present study was carried out in the pathology department of MGM medical college and hospital, Jamshedpur, Jharkhand, in the period of two years from January 2015 to December 2016. Total of 174 cholecystectomy specimens were studied during this period. The specimens fixed in 10% formalin were received from the department of surgery of MGMMCH. Each specimen has been studied under the following headings: - • Age and sex of the patients from whom gall bladder were removed. • Presence or absence of gall stones. • Naked eye examination of gall bladder including size, shape, thickening of wall, any visible growth or suspicious area, colour of mucous membrane and lastly for

evidence of cholesterosis without any gross abnormality in the gall bladder, three sections were taken including fundus, body and neck. If any gross abnormality is in the gall bladder, more sections were taken. Haematoxylin and eosin staining was done and then the slides were mounted with D.P.X. and examined under microscope. Finally, the histopathology findings were noted and prepared the report.

**Results:**

**RESULTS:**

**Table 1: Age Distribution**

Number	Mean age	Std Deviation
61	42.75 years	6.84 years

**Graph 1: Sex Distribution**

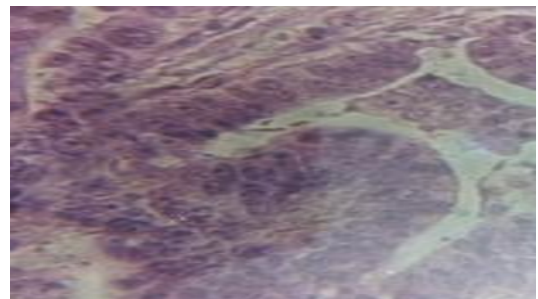
Number	Male	Female
61	39	21

**Table 3: Clinical Presentation**

EXTREME PAIN IN THE MIDDLE OF YOUR UPPER ABDOMEN	52
FEVER	27
CHILLS	27
NAUSEA	56
VOMITING	46
JAUNDICE	60
PALE- OR CLAY-COLORED STOOLS	48

**Diagnosis by Histopathology**

- Chronic Calculous Cholecystitis – 44
- Chronic Cholecystitis Cholesterosis - 5
- Follicular Cholecystitis -1
- Acute Calculous Cholecystitis - 2
- Acute Acalculous Cholecystitis - 1
- Chronic Cholecystitis with Evidence of Intestinal Metaplasia - 1
- Gall Bladder shows Poor Presentation with Autolytic Changes and Feature of Chronic Cholecystitis -1
- Xantho Granulomatous Cholecystitis - 1
- Chronic Cholecystitis with Dysplastic Changes - 1
- Chronic Cholecystitis with Nonspecific Lymphadenitis - 1
- Eosinophilic Cholecystitis - 1
- Adenocarcinoma of Gall Bladd



**Figure 1: Adenocarcinoma**

**Discussion:**

Gall bladder is a pyriform sac attached in a fossa on the inferior surface of the right lobe of liver. Its upper surface is attached to liver by connective tissue and the under-surface and sides are covered with peritoneum. It is slate-blue coloured, 7 to 10 cm long, 3-4 cm in width and its capacity is 50 ml. It is divided into fundus, body and neck. The gall bladder wall has three layers, mucosa, muscle layer and serosa. Gall bladder has no muscularis mucosa. The serosa layer is derived from the peritoneum. The fibromuscular layer is a thin layer of fibrous tissue, mixed with non-striated muscular fibers. The mucous membrane is made up of tall columnar cells. The epithelium is thrown into multiple folds and gives the gall bladder characteristic appearance under the microscope. Gall bladder diseases are classified broadly into three groups: - i) Congenital, ii) Inflammatory, iii) Tumor of gall bladder i.e. benign and malignant. Again, the inflammatory diseases are divided into i) acute ii) chronic calculous and non-calculous cholecystitis and iii) cholesterosis. Most of the malignant

tumours of the gall bladder are adenocarcinoma and rarely adenosquamous carcinoma, small cell carcinoma, squamous cell carcinoma and sarcomas. Gall stone disease affects 10-15% of the western population<sup>6,7</sup> with an annual incidence of 1 in 2001.

#### CONCLUSION

Present study firmly suggests the routine histopathological examination of all cholecystectomy specimens for detection of various types of chronic cholecystitis and also of incidental carcinoma of gall bladder

#### REFERENCES:

1. De Zoysa MIM, De Silva SKLA, Illeperuma A. Is routine histological examination of gallbladder specimen justifiable? *Ceylon Medical Journal* 2010;55(1):13-16.
2. Tantia O, Jain M, Khanna S, et al. Incidental carcinoma gallbladder during laparoscopic cholecystectomy for symptomatic gallstones disease. *Surg Endosc* 2009;23(9):2041-2046.
3. Khanna R, Chansuria R, Kumar M, et al. Histological changes in gallbladder due to stone disease. *Indian J Surg* 2006;68(4):201-204.
4. Khoo JJ, Nurul AM. A clinicopathological study of nine cases of gallbladder carcinoma in 1122 cholecystectomies in Johor, Malaysia. *Malays J Pathol* 2008;30(1):21-26.
5. Albores-Saavedra J, Henson DE. Atlas of tumor pathology: tumors of the gallbladder and extrahepatic bile ducts. Second Series. Fascicle 22. 2nd edn. Bethesda, MD: Armed Forces Institute of Pathology 1986:28-123.
6. Greenberger NJ, Paumgartner G. Diseases of the gallbladder and bile ducts. Chap-311. In: Longo DL, Fauci AS, Kasper DL, et al, eds. *Harrison's principles of internal medicine*. 18th edn. McGraw-Hill Professional 2011.
7. Friedman LS. Liver, Biliary Tract and Pancreas Disorders. In: Papadakis MA, McPhee SJ, Rabow MW, eds. *Current medical diagnosis and treatment* 2015. McGraw-Hill Education 2014