

Difference Between Cholecystitis and Cholelithiasis

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Key Difference – Cholecystitis vs Cholelithiasis

Bile is a substance produced by the [liver](#) and stored in the [gallbladder](#). It emulsifies the fat globules in the food we eat and enhances their water solubility and their absorption into the bloodstream. When the bile stored in the gallbladder is abnormally concentrated, some of its constituents can precipitate, forming stones inside the gallbladder. In medicine, this condition is identified as cholelithiasis. Cholelithiasis can inflame the tissues of the gallbladder. This inflammatory process happening inside the gallbladder is called cholecystitis. Thus, the key difference between cholecystitis and cholelithiasis is that **cholecystitis is the inflammation of the gallbladder while cholelithiasis is the formation of [gallstones](#)**. Cholecystitis is actually a complication of cholelithiasis which is either not diagnosed or not properly treated.

What is Cholecystitis?

The inflammation of the gallbladder is known as cholecystitis. In most occasions, this is due to an obstruction to the outflow of bile. Such an obstruction increases the pressure inside the gallbladder resulting in its distension which compromises the vascular supply to the gallbladder tissues.

Causes

- Gallstones
- [Tumors](#) in the gallbladder or biliary tract
- [Pancreatitis](#)
- Ascending cholangitis
- Trauma
- Infections in the biliary tree

Clinical Features

- Intense epigastric pain which radiates to the right shoulder or the back in the tip of the scapula.
- Nausea and vomiting
- Occasionally fever

- Abdominal bloating
- Steatorrhea
- [Jaundice](#)
- Pruritus

Investigations

- Liver function tests
- Full blood count
- USS
- CT scan is also performed sometimes
- MRI

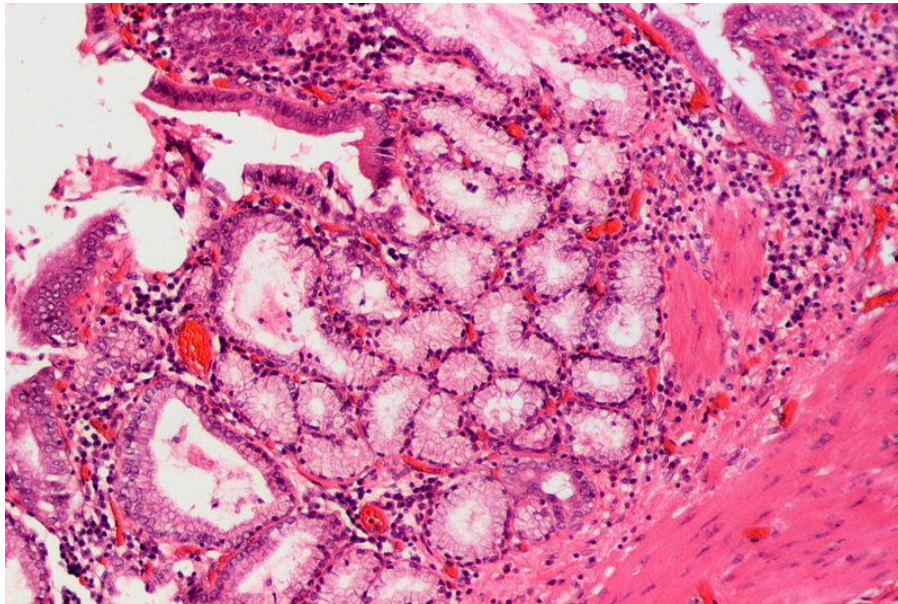


Figure 01: Chronic Recurrent Cholecystitis

Management

As in chronic pancreatitis, the treatment of gallbladder attacks also varies according to the underlying cause of the disease.

Lifestyle changes such as getting rid of obesity can be helpful in reducing the risk of gallbladder diseases.

Controlling the pain and minimizing the patient's discomfort is the first part of the management. Strong analgesics like morphine may even be required in the most severe cases. Since inflammation of the gallbladder is the pathological basis of the disease, anti-inflammatory drugs are given to control the inflammation. If the

obstruction in the biliary tree is due to a tumor, surgical resection of it should be carried out.

Complications

- Peritonitis due to perforation and the leakage of pus
- Intestinal obstruction
- Malignant transformation

What is Cholelithiasis?

Due to the increase in the concentration of bile, some of its constituents can precipitate inside the gallbladder forming gallstones. This condition is clinically identified as cholelithiasis.

Risk Factors for Cholelithiasis

- Advancing age
- Female gender
- [Obesity](#)
- Metabolic syndrome
- Inborn errors of metabolism
- [Hyperlipidemia](#) syndromes
- Different gastrointestinal diseases such as [Crohn's disease](#)

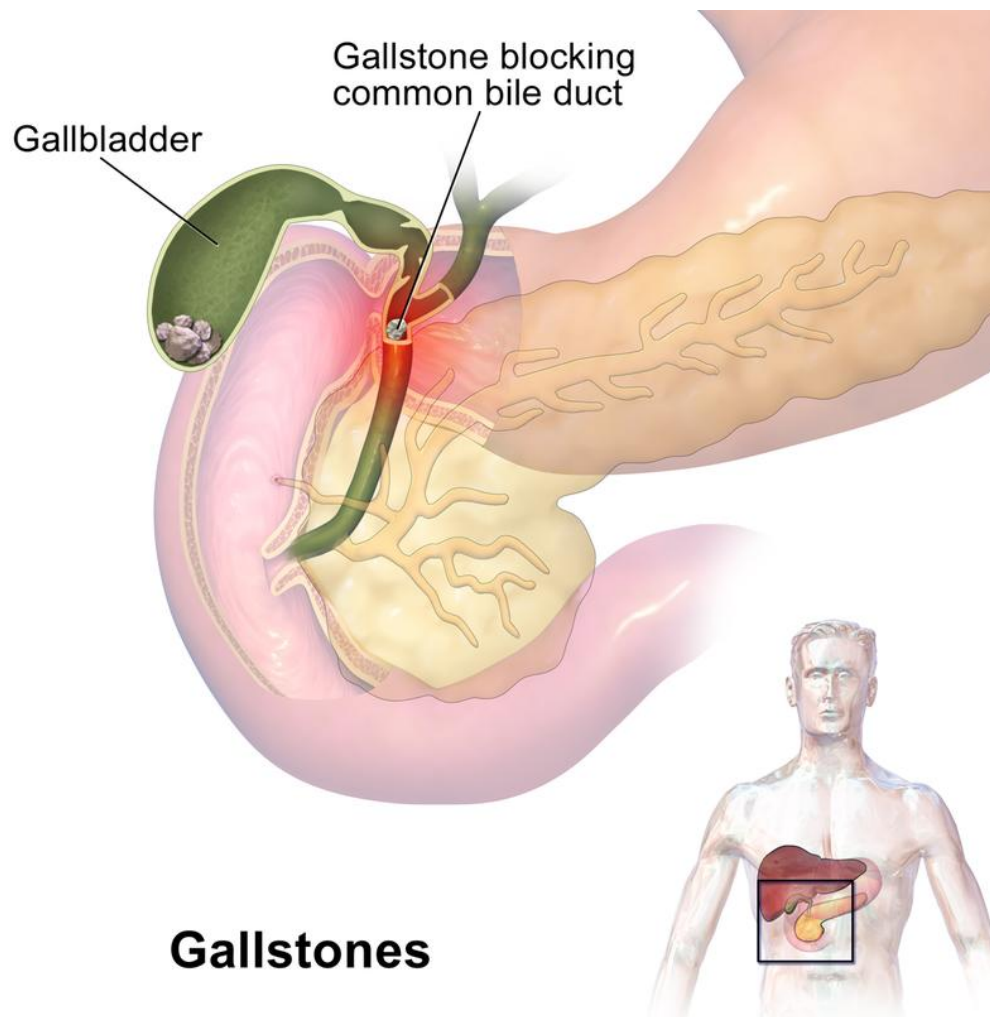
Pathogenesis

Depending on the constituent that is precipitated during the formation of the gallstones, they are categorized into 2 main categories as cholesterol stones and pigment stones.

The formation of gallstones is due to the following pathological conditions

- Supersaturation of bile with cholesterol
- Hypomotility of the gallbladder
- Accelerated cholesterol crystal nucleation
- Hypersecretion of mucus in the gallbladder

Pigment stones can be considered as a mixture of insoluble calcium salts and unconjugated bilirubin. Therefore, any condition that increases the amount of unconjugated bilirubin such as chronic hemolytic anemia increases the risk of getting pigment stones in the gallbladder. Infection of the biliary tract by certain pathogens including *E.Coli* and *Ascaris lumbricoides* is also known to predispose the formation of gallstones via the same mechanism.



Gallstones

Figure 02: Formation of Gallstones

Clinical Features

Gallstones can remain asymptomatic for a long period of time.

- The most prominent clinical feature of this condition is the biliary colic. Following a fatty meal due to the increase in the pressure inside the gallbladder, the patient feels an intense pain in the epigastric or right

hypochondriac regions of the abdomen that can occasionally radiate to the shoulder or back.

- The subsequent inflammatory reactions taking place inside the gallbladder due to the presence of gallstones can give rise to other non-specific symptoms such as nausea, vomiting, loss of weight and appetite and etc.
- There can be jaundice which is the yellowish discoloration of the skin
- Steatorrhea and dark color urine are the other common manifestations

Investigations

- Abdominal USS
- ERCP
- Liver function tests and other blood tests

Management

The choice of medical treatments or surgical treatments depends on the severity of the symptoms.

- Oral bile acids can be given to dissolve the gallstones by diluting them.
- Extracorporeal Shock Wave Lithotripsy
- Percutaneous cholecystostomy
- The surgical removal of gallbladder is called cholecystectomy

Complications

- Perforation
- Peritonitis
- Fistulas
- Cholangitis
- Pancreatitis
- Gallbladder carcinoma

What are the Similarities Between Cholecystitis and Cholelithiasis?

- Both conditions are associated with the gallbladder

- The prominent feature of both diseases is the severe pain which arises in the epigastric region that sometimes radiates to the back or shoulder.

What is the Difference Between Cholecystitis and Cholelithiasis?

Cholecystitis vs Cholelithiasis	
The inflammation of the gallbladder is known as cholecystitis	Formation of gallstones is clinically identified as cholelithiasis.
Cause	
<p>Cholecystitis is caused by,</p> <ul style="list-style-type: none"> · Gallstones · Tumors in the gallbladder or biliary tract · Pancreatitis · Ascending cholangitis · Trauma · Infections in the biliary tree 	<p>Causes of cholelithiasis are,</p> <ul style="list-style-type: none"> · Chronic hemolytic anemia · Infection by <i>E.coli</i>, <i>Ascaris lumbricoides</i> and etc. · Severe ileal dysfunction or bypass
Clinical Features	
<p>Clinical features of cholecystitis are,</p> <ul style="list-style-type: none"> · Intense epigastric pain which radiates to the right shoulder or the back in the tip of the scapula. · Nausea and vomiting 	<p>Gallstones can remain asymptomatic for a long period of time.</p> <ul style="list-style-type: none"> · Following a fatty meal due to the increase in the pressure inside the gallbladder, the patient feels an intense pain in the epigastric or right hypochondriac regions of the abdomen

- Occasionally fever
- Abdominal bloating
- Steatorrhea
- Jaundice
- Pruritus

that occasionally radiates to the shoulder or back.

- The subsequent inflammatory reactions taking place inside the gallbladder due to the presence of gallstones can give rise to other non -specific symptoms such as nausea, vomiting, loss of weight and appetite and etc.
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Diagnosis

- Cholecystitis is diagnosed by the following tests,
- Liver function tests
 - Full blood count
 - USS
 - CT scan is also performed sometimes
 - MRI

Investigations used for the diagnosis of cholelithiasis are,

- Abdominal USS
- ERCP
- Liver function tests and other blood tests

Complications

- Cholecystitis can be complicated with the following conditions
- Peritonitis due to perforation and the

Complications of cholelithiasis are,

- Perforation

leakage of pus

· Intestinal obstruction

Malignant transformation

· Peritonitis

· Fistulas

· Cholangitis

· Pancreatitis

· Gallbladder carcinoma

Management

Lifestyle changes such as getting rid of obesity can be helpful in reducing the risk of gallbladder diseases.

Controlling the pain and minimizing the patient's discomfort is the first part of the management. Strong analgesics like morphine may even be required in the most severe cases. Since the inflammation of the gallbladder is the pathological basis of the disease, anti-inflammatory drugs are given to control the inflammation. If the obstruction in the biliary tree is due to a tumor, surgical resection of it should be carried out.

The choice of medical treatments or surgical treatments depends on the severity of the symptoms.

· Oral bile acids can be given to dissolve the gallstones by diluting them.

· Extracorporeal Shock Wave Lithotripsy

· Percutaneous cholecystostomy

· The surgical removal of gallbladder is called cholecystectomy

Summary – Cholecystitis vs Cholelithiasis

Due to the increase in the concentration of bile, some of its constituents can precipitate inside the gallbladder forming gallstones. This condition is clinically identified as cholelithiasis. Cholecystitis, on the other hand, is the inflammation of the gallbladder. Cholecystitis is a complication of cholelithiasis. This is the difference between cholecystitis and cholelithiasis.

References:

1. Kumar, Parveen J., and Michael L. Clark. Kumar & Clark clinical medicine. Edinburgh: W.B. Saunders, 2009.
2. Kumar, Vinay, Stanley Leonard Robbins, Ramzi S. Cotran, Abul K. Abbas, and Nelson Fausto. Robbins and Cotran pathologic basis of disease. 9th ed. Philadelphia, Pa: Elsevier Saunders, 2010.

Image Courtesy:

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APA: Difference Between Cholecystitis and Cholelithiasis. (2017, November 02). Retrieved (date), from <http://differencebetween.com/difference-between-cholecystitis-and-cholelithiasis/>

MLA: "Difference Between Cholecystitis and Cholelithiasis" *Difference Between.Com*. 02 November 2017. Web.

Chicago: "Difference Between Cholecystitis and Cholelithiasis." *Difference Between.Com*. <http://differencebetween.com/difference-between-cholecystitis-and-cholelithiasis/> accessed (accessed [date]).



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