Republic of the Philippines
Nueva Ecija University of Science and Technology
Cabanatuan, City

A case study of a patient with Cholelithiasis with Cholecystitis

In Partial Fulfillment of the Requirement for
Nursing Care Management 102
Related Learning Experience
Dr. Paulino J. Garcia Memorial Research and Medical Center
Male Surgical Ward

Submitted By:
BSN 3- H
GROUP IV

Submitted To:
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CHAPTER I

ACKNOWLEDGEMENT

We, group 4, BSN 3-H, students of Nueva Ecija University of Science and Technology would like to thank Dr. Paulino J. Garcia Memorial Research and Medical Center Male Surgical Ward. And also to our Clinical Instructor, Mr. Joel Gines, for his patience in teaching us and making sure we learn the most from our clinical exposure.

The purpose of this case study is to be familiar with a patient who has Cholelithiasis and Cholecystitis; How it started, what are the causes and what are the signs and symptoms; especially how to prevent, treat and manage the patient by giving medication for treatment and providing rapport. We chose this case study because this is the first time that we’ve encountered a case like this in our entire rotation.

OBJECTIVES

General Objectives:

We did this case study for us to enhance our knowledge and to understand more information about Cholelithiasis and Cholecystitis, thus to give us an idea of how we could give proper nursing care for our clients with this condition, and so that we could apply them on our future exposures as students and eventually as nurses. We also did this case study as a part of our requirement in our clinical duty.

Specific Objectives:

This case study aims to determine “How the patient acquired the illness, and the process by which the body responds to the situation”.

This also specifically attempts to answer the following questions:

- What are Cholelithiasis and Cholecystitis?
• What system, organs or parts of the body are affected by the disease process?
• Where and how the illness was obtained, how it progressed and affected the body?
• What were the predisposing factors that lead the patient to acquire the disease?
• What interventions are needed to manage such condition?
• Were the interventions effective in helping the patient recover?

EPIDEMIOLOGY

➢ Frequency
An estimated 10-20% of Americans have gallstones, and as many as one third of these people develop acute cholecystitis. Cholecystectomy for either recurrent biliary colic or acute cholecystitis is the most common major surgical procedure performed by general surgeons, resulting in approximately 500,000 operations annually.

Cholelithiasis, the major risk factor for cholecystitis, has an increased prevalence among people of Scandinavian descent, Pima Indians, and Hispanic populations, whereas cholelithiasis is less common among individuals from sub-Saharan Africa and Asia.

➢ Mortality/Morbidity
Most patients with acute cholecystitis have a complete remission within 1-4 days. However, 25-30% of patients either require surgery or develop some complication. Patients with acalculous cholecystitis have a mortality rate ranging from 10-50%, which far exceeds the expected 4% mortality rate observed in patients with calculous cholecystitis. Emphysematous cholecystitis has a mortality rate approaching 15%. Perforation occurs in 10-15% of cases.
➢ Race
Pima Indian and Scandinavian people have the highest prevalence of cholelithiasis and, consequently, cholecystitis. Populations at the lowest risk reside in sub-Saharan Africa and Asia. In the United States, white people have a higher prevalence than black people.

➢ Sex
Gallstones are 2-3 times more frequent in females than in males, resulting in a higher incidence of calculous cholecystitis in females. Elevated progesterone levels during pregnancy may cause biliary stasis, resulting in higher rates of gallbladder disease in pregnant females. Acalculous cholecystitis is observed more often in elderly men.

➢ Age
The incidence of cholecystitis increases with age. The physiologic explanation for the increasing incidence of gallstone disease in the elderly population is unclear. The increased incidence in elderly men has been linked to changing androgen-to-estrogen ratios.

INTRODUCTION

Definition
Cholelithiasis is another name for gallstones. Gallstones are hard, solid lumps that form from bile in the gallbladder. Bile is a special liquid chemical made by the liver that helps the body break down and digest fats. The gallbladder is a storage sack for bile. One may have just one or many gallstones that can be as small as a piece of sand or as large as golf balls.

There are different kinds of gallstones. The most common stone is made of cholesterol (a fat-like material). A pigment stone is made up from bilirubin,
which is a part of old, dead blood cells. Other kinds of stones may be a *mixture* of cholesterol and bilirubin.

Gallstones in the gallbladder or in the bile ducts can cause problems. Stones can block bile ducts (flexible tubes). Bile ducts go from the liver to the gallbladder or from the gallbladder to the small intestine. Gallstones are more common in woman than in men between 20 and 50 years of age. But, as one gets older, anyone can get gallstones.

**Different types**

There are three main types of gallstones:

- **Mixed stones** – the most common type. They are comprised of cholesterol and salts. Mixed stones tend to develop in batches.
- **Cholesterol stones** – comprised mainly of cholesterol, a fat-like substance that is crucial to many metabolic processes. Cholesterol stones can grow to significant sizes, large enough to block bile ducts.
- **Pigment stones** – bile is greenish–brown in colour, due to particular pigments. Gallstones made from bile pigment are typically small but numerous.
Gallstones

Cholelithiasis is the presence of stones in the gallbladder. Cholecystitis is acute or chronic inflammation of the gallbladder. Choledocholithiasis is the presence of stones in the common bile duct.

Most gallstones result from supersaturation of cholesterol in the bile, which acts as an irritant, producing inflammation in the gallbladder, and which precipitates out of bile, causing stones. Risk factors include gender (women four times as like to develop cholesterol stones as men), age (older than age 40), multiple parity, obesity, use of estrogen and cholesterol-lowering drugs, bile acid malabsorption with GI disease, genetic predisposition, rapid weight loss. Pigment stones occur when free bilirubin combines with calcium. These stones occur primarily in patients with cirrhosis, hemolysis, and biliary infections.
Acute cholecystitis is caused primarily by gallstone obstruction of the cystic duct with edema, inflammation, and bacterial invasion. It may also occur in the absence of stones, as a result of major surgical procedures, severe trauma, or burns.

Chronic cholecystitis results from repeated attacks of cholecystitis, presence of stones, or chronic irritation. The gallbladder becomes thickened, rigid, fibrotic, and functions poorly.

Complications of gallbladder disease include cholangitis; necrosis, empyema, and perforation of gallbladder; biliary fistula through duodenum; gallstone ileus; and adenocarcinoma of the gallbladder.

Cholecystitis is an inflammation of the gallbladder wall and nearby abdominal lining. Cholecystitis is usually caused by a gallstone in the cystic duct, the duct that connects the gallbladder to the hepatic duct. The presence of gallstones in the gallbladder is called cholelithiasis. Cholelithiasis is the pathologic state of stones or calculi within the gallbladder lumen. A common digestive disorder worldwide, the annual overall cost of cholelithiasis is approximately $5 billion in the United States, where 75-80% of gallstones are of the cholesterol type, and approximately 10-25% of gallstones are bilirubinate of either black or brown pigment. In Asia, pigmented stones predominate, although recent studies have shown an increase in cholesterol stones in the Far East.

Gallstones are crystalline structures formed by concretion (hardening) or accretion (adherence of particles, accumulation) of normal or abnormal bile constituents. According to various theories, there are four possible explanations for stone formation. First, bile may undergo a change in composition. Second, gallbladder stasis may lead to bile stasis. Third, infection may predispose a person to stone formation. Fourth, genetics and demography can affect stone formation.
Risk factors associated with development of gallstones include heredity, Obesity, rapid weight loss, through diet or surgery, age over 60, Native American or Mexican American racial makeup, female gender-gallbladder disease is more common in women than in men. Women with high estrogen levels, as a result of pregnancy, hormone replacement therapy, or the use of birth control pills, are at particularly high risk for gallstone formation, Diet-Very low calorie diets, prolonged fasting, and low-fiber/high-cholesterol/high-starch diets all may contribute to gallstone formation.

Sometimes, persons with gallbladder disease have few or no symptoms. Others, however, will eventually develop one or more of the following symptoms; (1) Frequent bouts of indigestion, especially after eating fatty or greasy foods, or certain vegetables such as cabbage, radishes, or pickles, (2) Nausea and bloating (3) Attacks of sharp pains in the upper right part of the abdomen. This pain occurs when a gallstone causes a blockage that prevents the gallbladder from emptying (usually by obstructing the cystic duct). (4) Jaundice (yellowing of the skin) may occur if a gallstone becomes stuck in the common bile duct, which leads into the intestine blocking the flow of bile from both the gallbladder and the liver. This is a serious complication and usually requires immediate treatment.

The only treatment that cures gallbladder disease is surgical removal of the gallbladder, called cholecystectomy. Generally, when stones are present and causing symptoms, or when the gallbladder is infected and inflamed, removal of the organ is usually necessary. When the gallbladder is removed, the surgeon may examine the bile ducts, sometimes with X rays, and remove any stones that may be lodged there. The ducts are not removed so that the liver can continue to secrete bile into the intestine. Most patients experience no further symptoms after cholecystectomy. However, mild residual symptoms can occur, which can usually be controlled with a special diet and medication.
CHAPTER II – ASSESSMENT

A. NURSING HEALTH HISTORY

PERSONAL DATA

Name: F. C.
Age: 55 years old
Sex: Male
Address: Conception Zaragoza Nueva Ecija
Civil Status: Married
Nationality: Filipino
Religion: Roman Catholic
Birth Place: Zaragoza Nueva Ecija
Date of Birth: October 17, 1953
Admission:
  Date: January 20, 2009
  Time: 12:21 A.M.
Admitting Diagnosis:
  - Cholelithiasis with Cholecystitis
Post – operative Diagnosis:
  - Cholecystectomy
Attending Physician: Dr. Austria/Dr. Chua
Hospital No./Case No.: 89-03-71
FAMILY HEALTH AND ILLNESS HISTORY

According to Mr. F. C., the initial disease he knows that they have in their family was the hypertension that is on his Father side. His Father died because of Stroke and her Mother died because of a natural cause. He also added that Cholecystitis is prone to their family because one of his cousin also acquired this disease, and her wife had Appendicitis on the year 1989.

HISTORY OF PAST AND PRESENT ILLNESS

This is the third time Mr. F. C. was admitted to PJG hospital, on his first admission, he had undergone Mild Stroke last March 8, 2003. Which is almost 5 years ago. And last July 15, 2008, he had undergone again from Mild Stroke for the second time. He added also that he had an asthma when he was 7 years old and 24 years old, his asthma just stopped when he start drinking alcohol beverages as he said.

As for his present illness, he was admitted into the hospital (PJG Hospital) with the diagnosis of Choleystitis with multiple Cholelithiasis, and Hypertension he was admitted January 20, 2009 and months prior to admission due to epigastric pain and weight loss and was advised to remove his gallbladder. He just did not have his Cholecystectomy done immediately due to financial problem. When the money needed for his operation was enough he then goes to PJG last January 31, 2009 for his operation, he was diagnosed and operated by Dra. Chua.

Upon admission he had undergone. Some laboratory examination such as chest x-ray, urinalysis, CBC, FBS, BUN, Creatinine, ECG, Bilirubin 1&2 his initial medication Captopril for B.P 160/90mmhg.
Mr. F. C.
Dx.: Cholelithiasis with Cholecystitis
Year: 2009
Admission No.: 89-03-71

**c/c:** Right Upper Quadrant Pain
Hypertension

1 1/2 mos. PTA – Patient was admitted at Dr. Paulino J. Garcia Memorial Research and Medical Center due to Cholelithiasis with Cholecystitis, patient was given IV antibiotics and analgesics and was scheduled for elective Cholecystectomy but went on HAMA.

Four hours PTA
(+) Severe Right Upper Quadrant Pain
(+) Feeling of Bloatedness
(+) Nausea

Admit
Patient is (+) CUS, (+) HPN
B. PHYSICAL ASSESSMENT

VITAL SIGNS

<table>
<thead>
<tr>
<th></th>
<th>Normal Finding</th>
<th>Outcome</th>
<th>Analysis</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Body Temperature</strong></td>
<td>36.5-37.5°C</td>
<td>36.8°C</td>
<td>Normal</td>
</tr>
<tr>
<td><strong>Pulse Rate</strong></td>
<td>(80) 60-100 bpm</td>
<td>80 bpm</td>
<td>Normal</td>
</tr>
<tr>
<td><strong>Respiration</strong></td>
<td>(16) 12-20 cpm</td>
<td>20 cpm</td>
<td>Normal</td>
</tr>
<tr>
<td><strong>Blood Pressure</strong></td>
<td>120/80 mmHg</td>
<td>140/80 mmHg</td>
<td>Elevated BP indicates hypertension</td>
</tr>
</tbody>
</table>

HEAD TO TOE ASSESSMENT

*Skin*
Uniform color with slightly warmer than normal temperature, dry and smooth. No scars and hairs are evenly distributed.

*Nails*
Pale and Clean

*Head and Face*
The skull is proportionate to body size, no tenderness and there is a scar. Hair is oily, thick and evenly distributed. Face is symmetrical with symmetrical facial movement.

*Eyes*
The client has straight normal eye condition; with yellowish sclera. Pupil is black in color and equal in size. Have thin eyebrows.

*Nose*
The nasal septum is in the midline, mucosa is moist.

*Mouth*
The lips are pale and dry, symmetrical, pale mucosa, tongue is in midline.

**Neck**
The skin is uniform in color. Neck muscles are equal in size. No tenderness and masses upon palpation.

**Breast and Axilla**
No masses and tenderness upon palpation

**Abdomen**
Uniform in color. There is a wound dressing at RUQ, dry and intact.

**Upper Extremities**
There is resistance for muscle strength.

**PHYSICAL EXAMINATION**

Physical assessment done by attending physician reveals the patient is:

Afebrile
Pinkish
(+ ) severe RUQ pain
(+ ) feeling of bloatedness

Physical assessment done by student nurse reveals the patient is:

Afebrile
(+ ) dry lips
(+ ) Paleness
decrease Skin turgor
(- ) weakness

**Vital signs upon admission January 20, 2009.**

BP: 140/80  PR: 80
Tempeature: 36.8  RR: 22
C. LABORATORY EXAMINATIONS

Diagnostic and Laboratory procedures

URINALYSIS

Urine is examined to know the various properties of urine, a routine procedure for every patient to determine any pathological disorders.

Yield a large amount of information about possible disorders of the kidney and lower urinary tract, and systemic disorder that alter urine composition.

DATE ORDERED: 01-28-09
DATE RESULT IN: 01-28-09
COLOR: Yellow
TRANSPARENCY: slightly turbid
REACTION: 6.5
SPECIFIC GRAVITY: 0.010 hpf.
PUS CELLS: 0.1 hpf.

BILIRUBIN TEST

DATE ORDERED: 01-28-09
DATE RESULT IN: 01-29-09
TOTAL BILI: 3.7mg/dl
DIRECT BILI: 1.7mg/dl
INDIRECT BILI: 2.0mg/dl

HEMATOLOGIC TEST

DATE ORDERED: 01-28-09
DATE RESULT IN: 01-29-09
PLATELET: 433
APTT:
    CONTROL: 35
    PATIENT: 38.7
HGB: 119
HCT: 0.35
WBC: 11.7

DATE ORDERED: 01-24-09
DATE RESULT IN: 01-25-09
SGOT: 19
SGPT: 61

DATE ORDERED: 01-24-09
DATE RESULT IN: 01-25-09
SODIUM: 141.1mmol/L
POTASSIUM: 4.19mmol/L

RADIOLOGY EXAM
  (+)Bibasal pneumonia
  (+)Cardiomegaly

HEPATOBILIARY ULTRASOUND
  Multiple small cholelithiasis, with cholecystitis,liver,inthrapatic ducts and pancreas are unremarkable

ULTRASOUND FINDINGS
  Liver is normal
  The gallbladder is distended measuring 3.5 widest transverse Diameter
  The commom bile duct is not dilated with an AP diameter of 0.42cm
DEFINITION OF TERMS INDICATED IN THE LABORATORY EXAMINATION

RED BLOOD CELLS (ERYTHROCYTES):
Are the most common type of blood cells and the vertebrate body’s principal means of delivering oxygen from the lungs or grills to body tissue via blood.
The number of red cells is given as an absolute number per litre.

HEMOGLOBIN:
Is a protein that is carried by the red cells. It picks up oxygen in the lungs and delivers it to the peripheral tissues to maintain the viability of the cells.
The amount of hemoglobin in the blood, expressed in grams per litre. (Low hemoglobin is called anemia.)

HEMATOCRIT OR PACKED CELL VOL. (PCV):
This is the fraction of whole blood volume that consists of red blood cells.

WHITE BLOOD CELLS (LEUKOCYTES):
Are cells of the immune system which defend the body against both infectious disease and foreign materials.
All the white cell types are given as a percentage and as an absolute number per litre.

PLATELET COUNT:
Platelets or thrombocytes are the cell fragments circulating in the blood that are involved in the cellular mechanisms of primary hemostasis leading to the formation of blood clots. Dysfunction or low levels of platelets predisposes to bleeding, while high levels, although usually asymptomatic, may increase the risk of thrombosis.
Functions of Platelets can be generalised into a number of categories: Adhesion, Aggregation, Clot retraction, Pro-Coagulation, Cytokine signalling, Phagocytosis.

A normal platelet count in a healthy person is between 150,000 and 400,000 per mm³ of blood (150–400 x 10⁹/L). 95% of healthy people will have platelet counts in this range. Some will have statistically abnormal platelet counts while having no abnormality, although the likelihood increases if the platelet count is either very low or very high.

Low platelet counts are generally not corrected by transfusion unless the patient is bleeding or the count has fallen below 5 x 10⁹/L; it is contraindicated in thrombotic thrombocytopenic purpura (TTP) as it fuels the coagulopathy. In patients having surgery, a level below 50 x 10⁹/L) is associated with abnormal surgical bleeding, and regional anaesthetic procedures such as epidurals are avoided for levels below 80-100.

**Urinalysis**

Urinalysis yields a large amount of information about possible disorders of the kidney and lower urinary tract, and systematic disorders that alter urine composition. Urinalysis data include color, specific gravity, pH, and the presence of protein, RBC’s, WBC’s, bacteria, leukocyte, esterase, bilirubin, glucose, ketones, casts and crystals.
Gallbladder, muscular organ that serves as a reservoir for bile, present in most vertebrates. In humans, it is a pear-shaped membranous sac on the undersurface of the right lobe of the liver just below the lower ribs. It is generally about 7.5 cm (about 3 in) long and 2.5 cm (1 in) in diameter at its thickest part; it has a capacity varying from 1 to 1.5 fluid ounces. The body (corpus) and neck (collum) of the gallbladder extend backward, upward, and to the left. The wide end (fundus) points downward and forward, sometimes extending slightly beyond the edge of the liver. Structurally, the gallbladder consists of an outer peritoneal coat (tunica serosa); a middle coat of fibrous tissue and unstriped muscle (tunica muscularis); and an inner mucous membrane coat (tunica mucosa).
The function of the gallbladder is to store bile, secreted by the liver and transmitted from that organ via the cystic and hepatic ducts, until it is needed in the digestive process. The gallbladder, when functioning normally, empties through the biliary ducts into the duodenum to aid digestion by promoting peristalsis and absorption, preventing putrefaction, and emulsifying fat. Digestion of fat occurs mainly in the small intestine, by pancreatic enzymes called lipases. The purpose of bile is to; help the Lipases to Work, by emulsifying fat into smaller droplets to increase access for the enzymes, Enable intake of fat, including fat-soluble vitamins: Vitamin A, D, E, and K, rid the body of surpluses and metabolic wastes Cholesterol and Bilirubin.

Removal of the Gallbladder?

In some cases, the gallbladder must be removed. The surgery to remove the gallbladder is called a cholecystectomy (pronounced co-lee-sist-eck-toe-mee). In a cholecystectomy, the gallbladder is removed through a 5- to 8-inch long cut in your abdomen.
Once the gallbladder is removed, bile is delivered directly from the liver ducts to the upper part of the intestine.

**ANATOMY OF THE LIVER**

- the largest organ in the body located under the diaphragm more on the right side of the body specifically at the upper right quadrant of the body. The dark, reddish brown colored liver usually weighs 1.4 kg or about 3 lbs. It is enclosed by a fibrous connective tissue known as capsule. It has four lobes and is suspended from the diaphragm and abdominal wall by a delicate mesentry cord, the falciform ligament. It has many metabolic and regulatory roles; however, its digestive function is to produce bile. Bile leaves the liver through the common hepatic duct and enters the duodenum through the bile duct. The functional unit of liver is lobule and hepatocyte is the major cell.

Bile is a yellow-to-green, watery solution containing bile salts, bile pigments (chiefly bilirubin, a breakdown product of hemoglobin), cholesterol, phospholipids, and a variety of electrolytes. Of these components, only the bile salts (derived from cholesterol) and phospholipids aid the digestive process. Bile does not contain enzymes, but its bile salts *emulsify* fats by physically breaking
large fat globules into smaller ones, thus providing more surface area for the fat-digesting enzymes to work on.

From the liver, bile drips into the hepatic duct, which soon meets the cystic duct arriving from the gallbladder. Converging, they form one duct, the common bile duct, which meets the pancreatic duct, carrying enzymatic fluid from the pancreas. Like a smaller river meeting a larger one, the pancreatic duct loses its own name at this confluence and becomes part of the common bile duct, which empties on demand into the duodenum. When the sphincter of the bile duct is closed, bile from the liver is forced to back up into the cystic duct, and eventually into the gallbladder. There it is stored and concentrated until needed, when it flows back down the cystic duct.

Lobes of liver:
- right and left lobes
  * liver receives blood from 2 sources:
    - Hepatic artery-will supply oxygen blood to the liver cells
    - Hepatic portal vein- will bring deoxygenated

Functions of liver:
1. Detoxify poisonous and harmful chemicals like drugs and alcohol
2. maintaining blood glucose levels within normal range(70mg-110mg/dL or 80mg-120mg/dL)
   - Glycogenesis- glucose converted to glycogen and stored in the liver.
   - Glycogenolysis- stored glycogen converted to glucose
   - Gluconeogenesis- glucose formation from no-carbohydrate substances such as fats and proteins. Also known as “formation of new sugar”
3. cholesterol metabolism and transport
   - LDL’s- transports cholesterol and other lipids to body cells
     - large amounts will be deposited on the arterial walls causing atherosclerosis
- tagged as bad lipoproteins
  ➢ HDL’s- good cholesterol because this is destined to be broken down and be eliminated from the body

Functions of bile:
- emulsifies fats
  - absorption of fat-soluble vitamins (A, D, E, and K)

ANATOMY OF THE GALLBLADDER

- is a small, thin-walled green sac that snuggles in a shallow fossa in the inferior surface of the liver. When food digestion is not occurring, bile backs up the cystic duct and enters the gallbladder to be stored. While being stored in the gallbladder, bile is concentrated by the removal of water. Later, when fatty food enters the duodenum, a hormonal stimulus prompts the gallbladder to contract and spurt out stored bile, making it available to the duodenum

Functions of gallbladder:
- Act as storage of to-be-used bile
Remember:

If bile is stored in the gallbladder for too long or too much water is removed, the cholesterol it contains may crystallize, forming gallstones. Since gallstones tend to be quiet sharp blockage of the common hepatic duct or bile ducts prevents bile from entering the small intestine, and it begins to accumulate and eventually backs up into the liver exerting pressure into the liver cells. Then, bile salts and bile pigments begin to enter the bloodstream. As it circulates through the body, the tissues become yellow, or jaundiced.

Jaundice caused by blockage of ducts more often results from actual liver problems such as hepatitis (liver inflammation) or cirrhosis, a chronic inflammatory condition in which the liver is severely damaged and becomes hard and fibrous.

**Function of liver**

The liver has many functions. Some of the functions are: to produce substances that break down fats, convert glucose to glycogen, produce urea (the main substance of urine), make certain amino acids (the building blocks of proteins), filter harmful substances from the blood (such as alcohol), storage of vitamins and minerals (vitamins A, D, K and B12) and maintain a proper level or glucose in the blood. The liver is also responsible for producing cholesterol. It produces about 80% of the cholesterol in your body.

**Function of gall bladder**

The function of the gallbladder is to store bile and concentrate. Bile is a digestive liquid continually secreted by the liver. The bile emulsifies fats and neutralizes acids in partly digested food. A muscular valve in the common bile
duct opens, and the bile flows from the gallbladder into the cystic duct, along the common bile duct, and into the duodenum (part of the small intestine).

**Function of duodenum**

The duodenum is largely responsible for the breakdown of food in the small intestine. Brunner's glands, which secrete mucus, are found in the duodenum. The duodenum wall is composed of a very thin layer of cells that form the muscularis mucosae. The duodenum is almost entirely retroperitoneal. The pH in the duodenum is approximately six. It also regulates the rate of emptying of the stomach via hormonal pathways.

**Function of cystic duct**

Bile can flow in both directions between the gallbladder and the common hepatic duct and the (common) bile duct.
In this way, bile is stored in the gallbladder in between meal times and released after a fatty meal.

**Function of transverse colon**

The large intestine comes after the small intestine in the digestive tract and measures approximately 1.5 meters in length. Although there are differences in the large intestine between different organisms, the large intestine is mainly responsible for storing waste, reclaiming water, maintaining the water balance, and absorbing some vitamins, such as vitamin K.
Middle age (female > male before age 50), obesity, infection, pregnancy, hormonal contraceptive, celiac disease. Cirrhosis, pancreatitis, diabetes mellitus

Cholelithiasis
Refers to the formation of calculi (e.g. gallstones in the gallbladder)

Major constituents are cholesterol and pigment

Cholecystectomy
Removal of the gallbladder after ligation of the cystic duct

Body will return to normal function
Recovery

Gallstone in bile duct
Biliary cirrhosis
Rupture of gallbladder
Peritonitis

Pain
There is inflammation due to infection
Diabetes mellitus

Fever
Gastric irritation

Nausea and vomiting
Increase bilirubin

Jaundice

Bacterial proliferation
Galbladder and duct infection
Diarrhea

Abnormal fat digestion

There is restlessness and Increase in RR, temp, PR and WBC values

If not treated
Death

E. PATHOPHYSIOLOGY OF CHOLELITHIASIS/CHOLECYSTITIS
CHAPTER III - PLANNING

Risk factor

Heredity

Obesity

Rapid Weight Loss, through diet or surgery

Age Over 60

Female Gender

Diet-Very low calorie diets, prolonged fasting, and low-fiber/high-cholesterol/high-starch diets.

Bile must become supersaturated with cholesterol and calcium

The solute precipitate from solution as solid crystals

Crystals must come together and fuse to form stones

Gallstones

Obstruction of the cystic duct and common bile duct

Sharp pain in the right part of abdomen

Jaundice

Distention of the gall bladder

Venous and lymphatic drainage is impaired

Proliferation of bacteria

Localized cellular irritation or infiltration or both take place

Areas of ischemia may occur

Inflammation of gall bladder

CHOLECYSTITIS
Although gallstones can form anywhere in the biliary tree, the most common point of origin is within the gallbladder. There are 3 types of gallstones, pure cholesterol, pure pigment, and mixed. Under normal conditions, a delicate balance occurs among the levels of bile acids, cholesterol, and phospholipids. A disparity in this balance, especially with the supersaturation of cholesterol, predisposes patients to the formation of lithogenic bile and the subsequent development of cholesterol-type gallstones. Pigmented gallstones are composed of calcium bilirubinate and appear in 2 major forms, black and brown. Hemolysis and liver disease are associated with the black stones; the brown, earthy stones more frequently are formed outside the gallbladder and often are associated with bacterial infections of the biliary tract.
Bile stasis predisposes to the formation of biliary sludge and eventual formation of gallstones and commonly is seen in patients who are unable to take enteral nutrition. Infection of the biliary tree (especially with certain beta-glucuronidase-producing bacteria, such as Escherichia coli and parasites) is associated with an increased risk of ductal stone development. Intestinal resection is associated with an increased incidence of gallstones. Contrary to expectation, these are mainly of the pigment variety. Women are more likely to develop gallstones than men, with a ratio of 2:1. Classically, gallstones occur in obese, middle-aged women leading to the popular mnemonic, fat, fertile, forties. Oral contraceptive pills with high estrogen content increase the incidence of gallstones. The incidence increases with age.
### A. LIST OF PRIORITIZED NURSING DIAGNOSIS

**Priority:**
1. Acute pain
2. Anxiety
3. Knowledge Deficit

### B. NURSING CARE PLAN

<table>
<thead>
<tr>
<th>SUBJECTIVE:</th>
<th>Acute pain related to inflammation and distortion of tissue</th>
<th>Cholelithiasis is the formation of gallstones, which are composed of cholesterol, calcium salts, and bile pigments. When gallstones block the flow of bile, the gallbladder becomes swollen, leading to the possibility of pain, inflammation, or infection. The signs and symptoms of cholelithiasis often do not begin until the gallstone breaks.</th>
<th>Independent:</th>
<th>After 8 hours of nursing interventions, the patient's pain will be relieved or controlled.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Facial mask of pain</td>
<td></td>
<td>After 8 hours of nursing interventions, the patient's pain will be relieved or controlled.</td>
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<tr>
<td>Guarding behavior</td>
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<tr>
<td>Self focusing</td>
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<tr>
<td>VITAL SIGNS:</td>
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<td></td>
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</tr>
<tr>
<td>BP:</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>T:</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>PR:</td>
<td></td>
<td></td>
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<tr>
<td>RR:</td>
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</table>

- After 8 hours of nursing intervention, the patient's pain will be relieved or controlled.

- Assist in differentiating cause of pain and provides information about disease progression, development of complications and effectiveness of intervention.

- Bed rest in low Fowler's position reduces intra-abdominal pressure.

- Reduces irritation, dryness of the skin and itching sensation.

- Cool surroundings aid in minimizing dermal symptoms.
<p>| causes blockage in the biliary system. They may include, abdominal pain, usually in |
| discomfort |
| · Promotes rest, redirects attention, may enhance coping. |</p>
<table>
<thead>
<tr>
<th>ASSESSMENT</th>
<th>NURSING DIAGNOSIS</th>
<th>PLANNING</th>
<th>NURSING INTERVENTION</th>
<th>RATIONALE</th>
<th>EVALUATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>Subjective: “Nahihirapan ako ngayon sa sakit ko”. As verbalized by the patient.</td>
<td>Anxiety related to change in health status, as evidence by fear of specified consequence.</td>
<td>Short term: At the end of 5Hrs. of nursing intervention patient will be able to reduce anxiety.</td>
<td>&gt; Assess patient’s level of anxiety.</td>
<td>&gt; To establish baseline data.</td>
<td>Short term: At the end of 5Hrs. of nursing intervention patient was able to reduce feeling of anxiety.</td>
</tr>
<tr>
<td>Objective: Vital signs taken and recorded: BP: 120/80 PR: 103 BPM RR: 36 CPM Temp: 37.7°C</td>
<td></td>
<td>Long term: After two weeks of nursing care, patient will be able to accept changes in health status.</td>
<td>&gt; Place patient in comfortable position.</td>
<td>&gt; To help the patient have adequate period of rest and sleep.</td>
<td>Long term: After two weeks of nursing care, patient was able to accept/understand his health status.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>&gt; Provide non-pharmacological Therapies such as: T.V, Radio, Books, Socialization w/ others.</td>
<td>&gt; To relax &amp; provide comfort to the patient.</td>
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<td></td>
<td></td>
<td></td>
<td>&gt; Provide calm activities.</td>
<td>&gt; Can lessen the anxiety of the patient.</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>&gt; Provide health teaching about hepatitis disease.</td>
<td>&gt; To give more information about his health status.</td>
<td></td>
</tr>
<tr>
<td>ASSESSMENT</td>
<td>DIAGNOSIS</td>
<td>INFERENCE</td>
<td>PLANNING</td>
<td>INTERVENTION</td>
<td>RATIONALE</td>
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<tr>
<td>Subjective: “Hindi ko alam ang gagawin sa sugat ko” as verbalized by the patient.</td>
<td>· Knowledge deficient regarding condition and self care related to information misinterpretation.</td>
<td>Cholecystectomy is the surgical removal of the gallbladder, a small pearshaped sac that is located directly beneath the liver in the upper right side of the abdomen. The gallbladder's main function is to store bile, which is produced by the liver, and to release it as needed for digestion. The gallbladder's</td>
<td>After 8 hours of nursing interventions the patient will verbalize understanding of therapeutic needs.</td>
<td>· Review disease process, surgical procedure or prognosis. · Demonstrate care of incisions or dressing or drains. · Emphasize importance of maintaining low fat diet, eating small frequent meals, gradual reintroduction of foods or fluids containing fats over 4 to 6 month period. · Discuss avoiding or limiting use of</td>
<td>· Provides knowledge base on which patient can make informed choices. · Promotes independence in care and reduces risk of complications. · During initial 6 months after surgery, low fat diet limits need for bile and reduces discomfort associated with inadequate digestion of fats. · Minimizes the risk of</td>
</tr>
</tbody>
</table>

V/S taken as follows:
T:
P:
R:
BP:
| Function is important, but it is not an essential organ. | Alcoholic beverages. · Inform patient that loose stools may occur for several months. · Identify signs and symptoms requiring notification of provider like dark urine, jaundiced color of eyes or skin, clay colored stools. | Pancreatic involvement. · Intestines require time to adjust to stimulus of continuous output of bile. · Indicators of obstruction of bile flow or altered digestion, requiring further evaluation and intervention. |
### C. DRUG STUDY

<table>
<thead>
<tr>
<th>BRAND NAME</th>
<th>DOSAGE/CLASSIFICATION/ACTION</th>
<th>INDICATION</th>
<th>CONTRAINDICATION</th>
<th>ADVERSE EFFECTS</th>
<th>NURSING RESPONSIBILITIES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Celebrex, Flamar</td>
<td>200 mg/tab, 1 tab TID, P.O. PRN for pain</td>
<td>Analgesics and antipyretics, And muscle relaxants</td>
<td>Inhibits prostaglandins synthesis by selectively inhibiting cyclo-oxygenase-2 (COX-2) relieving pain and inflammation</td>
<td>Known sulfonamide hypersensitivity, asthma, urticaria, or allergic type reaction taking aspirins or other NSAID’s</td>
<td>Teach patient to take with a full glass of water to enhance absorption</td>
</tr>
<tr>
<td>Buscopan, Spasmosan</td>
<td>10 mg/tab, 1 tab TID, P.O. PRN for pain</td>
<td>Analgesics and antipyretics, And muscle relaxants</td>
<td>Inhibits prostaglandins synthesis by selectively inhibiting cyclo-oxygenase-2 (COX-2) relieving pain and inflammation</td>
<td>Constipation, diverticulitis, dysphagia, eructation, esophagitis, gastritis, gastroenteritis</td>
<td>Teach patient to report bleeding, bruising, black tarry stools, cramping, fatigue and malaise</td>
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<tr>
<td>Other Name: Slopolamine</td>
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<td></td>
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<td></td>
<td>Monitor blood counts during therapy; watch for decreasing platelets</td>
</tr>
</tbody>
</table>
CHAPTER IV – IMPLEMENTATION

DISCHARGE PLANNING

M – MEDICINE
   o Advice patient to continue taking his prescribed medicines

E – ENVIRONMENT AND EXERCISE
   o Maintain a quiet, pleasant, environment to promote relaxation.
   o Provide clean and comfortable environment.
   o Encourage walking everyday.

T – TREATMENT
   o Continue home medications.
   o Teach patient about wound care
   o Encourage patient to take multivitamins for immunity

H – HEALTH TEACHING
   o Provide written and oral instructions about wound care, activity, diet recommendations, medications, and follow-up visits.
   o Instruct patient to limit his activity for 24 to 48 hrs after discharge.
   o Encouraged patient to increase fluid intake
   o Encouraged patient to eat foods rich in Vitamin and Nutritious foods
   o Encourage patient to avoid salty and fatty foods
O – OUT PATIENT FOLLOW-UP
  o  Patient will be advised to go back in the hospital in a specific date to have a follow-up check up after discharge.
  o  Consult doctor for are any problems or complications encountered.

D – DIET
  o  Encourage patient to increase protein intake for tissue repair
     o  Advice patient to eat smaller-than-normal amounts of food at mealtimes.

S – SPIRITUALITY
  o  Encourage patient to communicate with God.
  o  Encourage patient to communicate with other people.
THEORETICAL BACKGROUND

This study is guided by a theory. We opted to use Betty Neuman’s System Model, since it reflects the morals of our practice by focusing on the person as a complete system, and provide a wholistic overview of the physiological, psychological, sociocultural, and developmental aspects of human beings. The use of nursing theories helps to serve as a framework for the development of nursing knowledge.

The function of a theoretical framework is to guide the research process. Nursing has passed the point where it operates within the framework of functionalism- only relating one variable to another. The theory must be both understandable and applicable to the real world of nursing.

The Betty Neuman Health Care Systems Model

This health care systems model is called the “Total Person Approach to Patient Problems.” The conceptual framework encompassing this model views people as unique individuals with a composite of characteristics within a normal given range of response. Each person in a state of wellness or illness is a dynamic composite of the interrelationship of physiological, psychological, sociocultural, and developmental variables. Although Neuman uses the term composite, the conceptual framework encompasses the Gestalt theory, which holds that each of us is surrounded by a perceptual field that is in a dynamic equilibrium. A field theory approach such as this maintains that all parts are intimately related and interdependent. The total organization of the field and its impact upon the functional behavior of the individual is the primary focus. In this total person model, the organization of the field considers:

1. the effect of the stressors
2. The reaction of the organism to the stressors
3. The organism itself, while taking into consideration the simultaneous interaction of the physiological, psychological, sociocultural, and development variables.

This total person framework, then, is an open system model with two major components, stress and the reaction to stress. In the Gestalt theory each stressor would affect the individual’s reaction to any other stressor. The individual’s behavior then would be a function of the dynamic interaction between stressors and the defenses against stressors supplied by the individual as well as the supporting environment.

Commonplaces

Commonplaces are topics commonly addressed by most theorists. These topics are usually vague, indicating locations rather than specific entities. The
commonplaces in a theory may be used to organize a theory or as structures with which to evaluate and understand a theory. Definitions of the commonplaces utilized in the Neuman Systems Model are made by identifying the elements and relationships that have significance for Neuman.

**Person**

The conceptual framework encompassing this model views people as unique individuals who are a composite of characteristics within a normal given range of response. Each person in a state of wellness or illness is a dynamic composite of the interrelationship of physiological, psychological, sociocultural, and developmental variables. Person is an open system with interaction with the environment.

**Nursing**

Nursing is viewed as a unique profession in that it is concerned with all the variables affecting an individual’s response to stressors. The nurse has an obligation to seek the highest potential level of stability for each individual.

**Health**

Wellness is considered the ability of an individual’s flexible line of defense against any stressor to maintain equilibrium. Any variances of wellness occur when stressors are able to penetrate the flexible line of defense. Neuman views health on a continuum with levels of wellness and variances of wellness. If a person’s total needs are met, he or she is in an optimal level of wellness. Hence, a reduced state of wellness is the result of needs not being met.

**Person to Nurse**
The nurse assesses and validates the individual’s response to stressors. Response to some stressors are known whereas others are manifested depending on the meaning of the experience to the individual. The nurse has a knowledge of the relation of the environment and the person’s reaction to stress and reconstitution.

**Person to Health**

People retain harmony and balance with the environment by a process of interaction and adjustment. Persons are views as a total person composed of physiological, psychological, sociocultural, and developmental variables. The interrelationship of these variables determines the degree of reaction and individual has to any stressor. Each individual is seen as unique, but containing a blend of common attributes within a normal range of response. This normal range of response is known as a normal line of defense- that which is necessary to maintain an individual’s equilibrium.

**Nursing to Health**

The nurse assists individuals, families, and groups to attain or maintain a maximum level of wellness by appropriate interventions. Nursing actions are interventions at the primary, secondary, and tertiary prevention levels that will reduce stress factors, strengthen the line of defense, and maintain a reasonable degree of adaptation.

**Environment**

The environment consists of internal and external factors. Internal is the flexible line of defense against stressors, such as the body’s immune response pattern or the mobilization of white blood cells. External consists of an individual’s coping ability, lifestyle, developmental stage, and so forth, and is known as the normal line of defense.


**Stressors**

Stressors may vary as to impact or reaction. There are three types of stressors:

1. Intrapersonal forces occurring within the individual.
2. Interpersonal forces occurring between one or more individuals.
3. Extrapersonal forces occurring outside the individual.

A stressor attempts to penetrate an individual’s normal line of defense to cause disequilibrium.
References

Books


Online Resources


http://www.healthsystem.virginia.edu/uvahealth/adult_liver/chole.cfm

- www.wikipedia.com