GASTROINTESTINAL SYSTEM • HEPATOBILIARY

Gallbladder Disorders

Cholelithiasis & Cholecystitis — High-Yield NCLEX 2026 Review

✦ Aligned with the Next Generation NCLEX Clinical Judgment Measurement Model ✦

Gallbladder + Stones

The Quick Picture

The gallbladder stores & concentrates bile produced by the liver. When cholesterol or bilirubin crystallizes → **stones form** (cholelithiasis). When a stone lodges in the cystic duct → bile backs up → **inflammation** (cholecystitis).

1 Definition / Overview

WHAT IT IS & WHY IT MATTERS

🪨 Cholelithiasis

Presence of **gallstones** in the gallbladder. Stones are either *cholesterol* (most common) or *pigment* (bilirubin). Often asymptomatic until a stone obstructs bile flow.

🔥 Cholecystitis

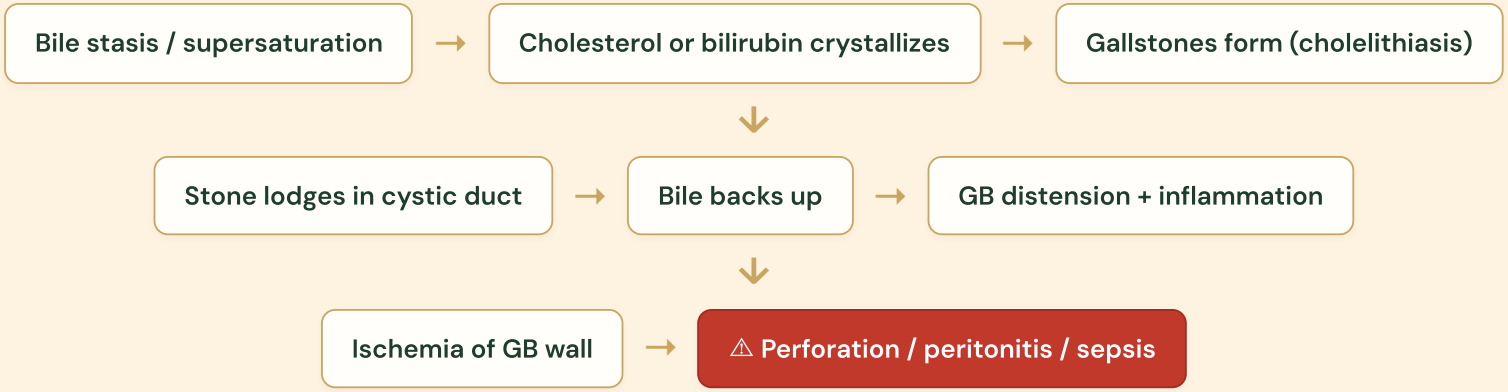
Inflammation of the gallbladder, most often caused by a stone lodged in the cystic duct. Bile stasis → edema → ischemia → risk of necrosis or perforation.

Why It Matters (Clinical Relevance)

- Cholecystectomy is one of the most common abdominal surgeries in the U.S.
- Untreated cholecystitis can progress to **gangrene, perforation, peritonitis, or sepsis**
- Classic NCLEX scenario: postprandial RUQ pain + fatty food intolerance

2 Pathophysiology (Simplified)

TRACE THE PATH FROM STONE → INFLAMMATION



Risk Factors — The 5 F's 💡

- **F**emale
- **F**orty (age 40+)
- **F**at (obesity, high-fat diet)
- **F**ertile (multiparous, pregnancy, OCPs, estrogen)
- **F**air (Caucasian; also Native American heritage)
- Additional: rapid weight loss, bariatric surgery, diabetes, sickle cell (pigment stones), cirrhosis

3 Signs & Symptoms

MILD ▸ SEVERE PROGRESSION

MILD Cholelithiasis

- Often **asymptomatic** (silent stones)
- Vague RUQ discomfort, indigestion
- Belching, bloating, flatulence
- Nausea — especially after fatty meals
- Fatty food intolerance

SEVERE Cholecystitis

- **Severe RUQ pain** radiating to **right shoulder/scapula**
- Pain **worsens after fatty meal** (postprandial)
- Nausea & vomiting
- Fever, chills, tachycardia
- **Positive Murphy's sign** — pain on inspiration during RUQ palpation
- **Jaundice** (if common bile duct obstructed)
- **Clay-colored stools** + **dark tea-colored urine**
- Pruritus (from bile salt deposits in skin)
- Steatorrhea (fatty, foul stools)

🚨 RED FLAGS — PRIORITY ESCALATION

- **Charcot's Triad** (fever + jaundice + RUQ pain) = ascending cholangitis — medical emergency
- Rigid, board-like abdomen + rebound tenderness = **perforation / peritonitis**
- Hypotension + tachycardia + fever >101°F = **sepsis**
- Sudden relief of pain with worsening vitals = possible perforation (DO NOT assume improvement)

4 Priority Nursing Interventions

ABCS • SAFETY • PRIORITIZATION

Acute / Pre-Op

- **NPO** to rest the GI tract & gallbladder
- Insert **NG tube** for decompression (if vomiting/distension)
- Administer **IV fluids** — maintain hydration & electrolytes
- Administer **analgesics** as ordered (morphine or meperidine)
- Administer **antiemetics** & antispasmodics
- Administer **antibiotics** (if infection suspected)
- Monitor pain level, vital signs, labs (WBC, liver enzymes, bilirubin)
- Position in **low-Fowler's** or right-side lying for comfort

Post-Op Cholecystectomy

- **Semi-Fowler's position** to reduce tension on incision
- Encourage **deep breathing & incentive spirometry** (URQ incision = ↑ atelectasis risk)
- Splint abdomen during coughing
- Early ambulation — esp. laparoscopic (shoulder pain from CO_2 gas is common; walking helps)
- **T-tube care** (if open procedure): keep bag **below incision**, record output, do NOT clamp without order
- Expect T-tube drainage: 500–1000 mL first 24 hrs, tapering
- Advance diet slowly: clear liquids → low-fat as tolerated
- Monitor for bile leak, bleeding, infection, or bile peritonitis

5 Pharmacology

KEY DRUGS & CONSIDERATIONS

DRUG / CLASS	ACTION	NURSING CONSIDERATIONS
Morphine / Meperidine (Demerol) *Opioid analgesics*	Relieve severe biliary pain	Monitor respiratory rate & sedation. Classic NCLEX note: meperidine historically preferred for less Sphincter of Oddi spasm (though current evidence accepts morphine).
Ketorolac (Toradol) *NSAID*	Anti-inflammatory pain relief	Short-term only (≤5 days). Watch for GI bleed, renal impairment.

DRUG / CLASS	ACTION	NURSING CONSIDERATIONS
Dicyclomine *Antispasmodic*	Reduces biliary smooth muscle spasm	Anticholinergic effects: dry mouth, blurred vision, urinary retention.
Ondansetron (Zofran) *Antiemetic*	Controls nausea/vomiting	Monitor QT interval; watch for headache.
Ursodiol (Actigall) *Bile acid*	Dissolves cholesterol stones	Long-term therapy (months). Monitor LFTs. For non-surgical candidates.
Cholestyramine (Questran) *Bile acid sequestrant*	Relieves pruritus from bile salts	Give other meds 1 hr before or 4 hrs after. Constipation common.
Vitamin K (Phytonadione) *Fat-soluble vitamin*	Corrects prolonged PT from impaired bile flow	Given pre-op if PT prolonged — prevents bleeding during surgery.
Ciprofloxacin / Metronidazole *Antibiotics*	Treat/prevent biliary infection	Monitor C&S, tendon pain (cipro), metallic taste (metro), and alcohol interaction (metro).

6 NCLEX Test Traps ⚠

WHERE STUDENTS LOSE POINTS

1. **Pain radiates to the RIGHT shoulder** — NOT left. Left shoulder = cardiac (Kehr's sign = splenic rupture). Right shoulder/scapula = biliary.

2. **Clay-colored stool + dark urine = bile duct obstruction.** Bile can't reach stool (no brown pigment); bilirubin spills into urine instead.

3 **Sudden pain relief is NOT always good.** In a rigid, distended abdomen — it may mean perforation has occurred and pressure released. Check vitals!

4 **T-tube bag placement:** always *below* the incision level. Placing it above = reflux of bile into the biliary tree = infection risk.

5 **Never clamp a T-tube without an order.** Premature clamping can cause bile back-up, peritonitis, or rupture.

6 **Murphy's sign** = pain / abrupt breath-holding when examiner palpates RUQ during *inspiration*. Classic cholecystitis finding.

7 **After laparoscopic cholecystectomy**, shoulder pain is from residual CO_2 gas — NOT a complication. Ambulate & reassure.

8 **Don't confuse pancreatitis vs. cholecystitis**: both involve fatty food triggers, but pancreatitis pain radiates to the *back* (with elevated amylase/lipase); cholecystitis radiates to the right shoulder.

7 Patient Education

DISCHARGE & LONG-TERM SELF-CARE

Diet Teaching

- Follow a **low-fat diet** — lifelong
- Eat **small, frequent meals**
- **Avoid:** fried foods, creamy sauces, whole milk, cheese, gravies, chocolate, nuts, avocado in excess
- **Choose:** lean proteins, fruits, vegetables, whole grains, skim milk, baked/broiled items

Post-Op & Lifestyle

- Report: fever, increased pain, **jaundice, clay stools, dark urine**
- Report: redness, drainage, or separation at incision
- No heavy lifting >10 lbs for 4–6 weeks (open procedure)
- Lap chole: usually return to normal activity in 1 week

- Limit gas-producing foods (cabbage, beans, onions) post-op if uncomfortable

- Maintain healthy weight; avoid rapid weight loss
- Stay well hydrated
- Take prescribed vitamins (A, D, E, K) if malabsorption present

8 Memory Boosters

MNEMONICS & PATTERN RECOGNITION

RISK FACTORS

The 5 F's

Female | Forty | Fat | Fertile | Fair

PAIN PATTERN

"Fatty Meal → Right Shoulder"

RUQ pain that radiates up to the right shoulder/scapula after eating a fatty meal = **biliary colic**.

💡 Bile Flow Clue

Clay + Dark = Blocked duct.
Clay-colored stool + dark urine = bile can't reach the gut → points to obstruction of the common bile duct.

💡 T-Tube Rule

T-tube = "Trap bile below."
Bag stays below the incision; never clamp without an order; expect decreasing output day by day.

Murphy's Sign

M for Midway breath — Mute.
During RUQ palpation, the patient suddenly halts inspiration due to pain = positive Murphy's.

Charcot's Triad

"FJR" — Fever, Jaundice, RUQ pain.
Classic for *ascending cholangitis* — bile duct infection. Emergency!

9 NCJMM Clinical Judgment Framework

APPLIED TO CHOLECYSTITIS SCENARIOS

1	2	3	4
RECOGNIZE	**ANALYZE**	**PRIORITIZE**	**EVALUATE**
RUQ pain radiating to right shoulder after fatty meal + positive Murphy's sign + fever	Likely cholecystitis. Assess for jaundice, bilirubin, WBC. Screen for perforation & sepsis.	NPO • IV fluids • Pain control • Antibiotics • Monitor vitals & abdominal assessment	Pain ↓, vitals stable, no peritoneal signs, WBC trending down, tolerating low-fat diet