# Composition, Classification and Clinical Features of Hernia

A **hernia** is the abnormal protrusion of an organ or tissue (usually abdominal contents) through a weakened area or defect in the walls of its containing cavity, most commonly the abdominal wall.

## Anatomical Composition of a Hernia

A hernia comprises three components:

1. **Hernial Sac**
    - A pouch of **peritoneum** containing the herniated contents.
    - Subdivided into:
        - **Mouth** : Point of entrance.
        - **Neck** : Junction of sac and abdominal cavity (site prone to strangulation).
        - **Body and Fundus** : Extent of the sac.
2. **Coverings**
    - Derived from layers of the abdominal wall through which the sac protrudes.
    - In chronic cases, these layers thin and lose distinctness.
3. **Contents**
    - **Omentum** : Omentocele.
    - **Small or large intestine** : Enterocele.
    - **Part of the bowel wall** : Richter's hernia.
    - **Meckel's diverticulum** : Littre's hernia.
    - **Bladder** : Sliding hernia component.
    - **Ovary ± fallopian tube** (especially in females).
    - **Fluid** (e.g., ascitic fluid).

## Types of Hernias by Reducibility and Complication

| Type | Description |
|---|---|
| **Reducible** | Hernia returns spontaneously or with manipulation. Positive **expansile cough impulse** . |
| **Irreducible** | Contents cannot be returned; no ischemia. Often due to adhesions or tight neck. |
| **Obstructed** | Intestinal obstruction present without ischemia. Risk of progression to strangulation. |
| **Incarcerated** | Entrapped bowel with fecal impaction; palpable putty-like mass. |
| **Strangulated** | Compromised blood supply ? ischemia ? necrosis within hours. A **surgical emergency** . Most common in **femoral** hernias. |

## Common Causes and Risk Factors

- **Increased intra-abdominal pressure** : Chronic cough, constipation, urinary obstruction.
- **Heavy lifting** or straining.
- **Obesity** .
- **Previous abdominal surgery** (incisional hernia).
- **Congenital defects** .

## Pathophysiology of Strangulation

- Initial **venous obstruction** causes congestion and transudate into the sac.
- Progression to **arterial compromise** leads to ischemia, mucosal necrosis, and **gangrene** .
- Fibrinous exudate dulls serosal shine.
- Bacterial translocation and infection ensue.
- **Perforation** leads to **peritonitis** and sepsis.

## Clinical Presentation

**Uncomplicated (Reducible) Hernia:**

- Intermittent bulge that increases with coughing or standing.
- Non-tender, reducible swelling with positive cough impulse.

**Complicated (Strangulated/Obstructed) Hernia:**

- **Sudden severe pain** at the hernia site ? colicky abdominal pain.
- **Nausea, vomiting** , abdominal distension.
- Tender, tense, **irreducible mass** .
- **Absent bowel sounds** (late ileus).
- **No cough impulse** .
- Skin changes (erythema) over the hernia suggest ischemia.
- Spontaneous **relief of pain may indicate perforation** , not resolution.

## Diagnostic Evaluation

- **Clinical examination** : Key to diagnosis.
- **Ultrasound** : Useful for detecting occult hernias.
- **CT scan** : Highly sensitive; detects complications (strangulation, bowel obstruction).
- **X-rays** : May show bowel obstruction.

## Management Principles

**General Measures:**

- **Manual reduction** : In uncomplicated, reducible hernias.
- **Surgical repair (herniorrhaphy/herniorrhaphy + mesh)** : Definitive treatment.

**Emergency Surgery Indications:**

- **Strangulated** or **obstructed** hernia.
- Necrotic bowel may require **resection and anastomosis** .

**Postoperative Considerations:**

- Avoid heavy lifting, treat cough/constipation to prevent recurrence.
- Mesh repairs (e.g., Lichtenstein tension-free repair) reduce recurrence risk.

## High-Yield Notes

- **Femoral hernias** are more prone to strangulation than **inguinal hernias** .
- **Richter’s hernia** may strangulate without obstruction.
- **Indirect inguinal hernias** pass through the deep inguinal ring; common in young males.
- **Direct inguinal hernias** are acquired; through Hesselbach's triangle.