

Hernias



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Definition

- The abnormal protrusion of a viscus or part of a viscus through a weakness in its containing wall.



Aetiology

- Basic design weakness
- Weakness due to structures entering and leaving the abdomen
- Developmental failures
- Genetic weakness of collagen
- Sharp and blunt trauma
- Weakness due to ageing and pregnancy
- Primary neurological and muscle diseases
- ? Excessive intra-abdominal pressure



Composition of a hernia

- Sac
 - Peritoneal lining of a hernia; may be complete or incomplete as in sliding hernia
- Neck of the sack
 - At the level of the defect in the abdominal wall where the hernia emerges
- Contents
 - Bowel or omentum



Specific hernia types

- Inguinal hernia- 73%
- Femoral hernia- 17%
- Ventral hernias- hernias of the anterior abdominal wall
 - Umbilical–para umbilical
 - Epigastric
 - Incisional
 - Para stomal
 - Spigelian
 - Lumbar
 - Traumatic



- Rare external hernias

- Perineal hernia
- Obturator hernia
- Gluteal hernia
- Sciatic hernia



Types of hernia by complexity

- **Occult** - not detectable clinically; may cause severe pain
- **Reducible** - Contents can be fully restored to the abdominal cavity spontaneously or with manipulation
- **Incarcerated** - Part or all of the contents cannot be reduced due to a narrow neck and/or adhesions; there is a risk of strangulation
- **Obstructed** - Contains an obstructed bowel loop due to kinking; usually goes on to strangulation.



- **Strangulated** - Blood supply to the contents of the sac is cut off; the tight neck of the peritoneal sac is the usual site of strangulation

Pathological sequence of Strangulation

Venous and lymphatic occlusion

oedema and increased venous pressure

impeding arterial flow

bowel necrosis and perforation



Assessing a patient with a hernia

- History
 - Is it a hernia? (history of reducibility)
 - Site?
 - Simple or complicated? Complicated if: Incarcerated: patient can't reduce it anymore. Obstructed: symptoms of bowel obstruction. Strangulated: acute and severe pain, bowel obstruction, and patient is generally unwell.
 - Any risk factors? (heavy lifting, COPD, constipation, BPH, previous surgery).



- Physical examination

- Confirm the diagnosis and type (anatomical location, reducibility, cough impulse, overlying skin color changes, multiple defects, contralateral side, scrotal content for groin hernia).
- Always examine both sides in suspected groin hernias.
- Any scars? (recurrent or incisional hernia)
- General examination is essential to look for predisposing factors like bowel pathology and BPH.



Investigations

- Plain radiograph – of little value
- Ultrasound scan – low cost, operator dependent
- CT scan – incisional hernia
- MRI – good in sportsman's groin with pain
- Contrast radiology – especially for inguinal hernia
- Laparoscopy – useful to identify occult inguinal hernia



Management

- Not all hernias require surgical repair
- Small hernias can be more dangerous than large
- Pain, tenderness and skin color changes imply high risk of strangulation
- Femoral hernia should always be repaired
- Consider symptoms, risk of strangulation as with and patient mobility and fitness for surgery.



Surgical approaches to hernia

All surgical repairs follow the same basic principles:

1. reduction of the hernia content into the abdominal cavity with removal of any non-viable tissue and bowel repair if necessary;
2. excision and closure of a peritoneal sac if present or replacing it deep to the muscles;
3. Re approximation of the walls of the neck of the hernia if possible;
4. permanent reinforcement of the abdominal wall defect with sutures or mesh.



Mesh in hernia repair

The term 'mesh' refers to prosthetic material, either a net or a flat sheet, which is used to strengthen a hernia repair. Mesh can be used:

- to bridge a defect: the mesh is simply fixed over the defect as a tension-free patch;
- to plug a defect: a plug of mesh is pushed into the defect;
- to augment a repair: the defect is closed with sutures and the mesh added for reinforcement.



Mesh characteristics

- Woven, knitted or sheet
- Synthetic or biological - mainly synthetic
- Light, medium or heavyweight - lightweight becoming more popular
- Large pore, small pore - large pore causes less fibrosis and pain
- Intraperitoneal use or not - non-adhesive mesh on one side
- Non-absorbable or absorbable - mainly non-absorbable

