

## Hernia AWR (Abdominal Wall Reconstruction)

A hernia occurs when an organ or tissue pushes through an opening or weak spot in the muscle or connective tissue that normally contains it. Abdominal Wall Reconstruction (AWR) refers to the surgical procedure performed to repair complex or recurrent hernias in the abdominal wall, usually involving a large defect or weakened area that requires reinforcement.

### Definition of Hernia AWR

A hernia typically occurs when there's a defect or weakness in the abdominal wall. Hernias can be caused by a variety of factors, such as obesity, prior surgery, chronic coughing, or heavy lifting. AWR (Abdominal Wall Reconstruction) is a surgical approach used to repair large, complex, or recurrent hernias, often in cases where the abdominal wall is very weak or where prior attempts at repair have failed.

### Symptoms of Hernia

- **Visible bulge or lump:** Usually seen when standing or coughing; may be more noticeable after heavy lifting.
- **Pain or discomfort:** This is typically around the site of the bulge, especially when coughing, bending over, or lifting heavy objects.
- **Swelling:** Around the hernia site, sometimes with tenderness or redness.
- **Heaviness or pressure:** Feeling of fullness or pressure in the abdomen.
- **Nausea or vomiting:** (if the hernia is incarcerated or strangulated, which is more serious).

A strangulated hernia (where blood supply to the herniated tissue is cut off) is a medical emergency and can cause:

- **Severe pain at the hernia site**
- **Redness or warmth in the bulge**
- **Vomiting**
- **Fever**

### Investigations for Hernia

- **Physical Examination:** The doctor typically performs a physical exam, asking you to cough or strain, which can help reveal a bulge.
- **Imaging Tests:**

- Ultrasound: Commonly used to detect the presence and size of the hernia and its contents.
- CT scan (Computed Tomography): A detailed scan often used for larger or more complex hernias, including those requiring AWR.
- MRI (Magnetic Resonance Imaging): Used when more detailed imaging of the abdominal wall is needed, especially for larger hernias or recurrent hernias.

## Management of Hernia

### Non-Surgical Treatment (for small, non-symptomatic hernias):

- Observation: If the hernia is small and doesn't cause significant symptoms, the doctor may suggest a "wait and see" approach.
- Lifestyle Modifications: Reducing physical activity that might aggravate the hernia, like heavy lifting, and managing obesity or constipation to avoid strain on the abdominal wall.

### Surgical Treatment (for larger or symptomatic hernias):

- Herniorrhaphy: This is the most common procedure where the surgeon makes an incision to push the hernia back into place and then repairs the defect with stitches.
- Hernioplasty: In this procedure, a mesh is used to reinforce the weakened abdominal wall after the hernia is pushed back into place. The mesh helps reduce the risk of recurrence.

### Techniques of MIS (Minimal invasive surgery) for Hernia Surgery

Robotic

Laparoscopic

### Advantages of Robotic and Laparoscopic hernia Surgery.

#### 1. Smaller Incisions

- Minimally invasive: Only a few small incisions are made, reducing trauma to the body compared to traditional open surgery, where a large incision is required.
- Less scarring: Smaller incisions lead to smaller scars, which improves cosmetic results.

## 2. Faster Recovery

- Shorter hospital stay: MIS typically requires a shorter hospital stay (sometimes outpatient or just an overnight stay).
- Quicker return to daily activities: Patients usually recover faster and can return to work or school in just a few days compared to weeks with traditional surgery.
- Reduced pain: Smaller incisions usually result in less post-operative pain and discomfort. Most patients can manage their pain with over-the-counter medications instead of strong painkillers.

## 3. Less Risk of Infection

- Reduced wound exposure: Smaller incisions mean there's less risk of infection since the surgical site is smaller and less exposed.
- Lower chance of complications: MIS reduces the likelihood of complications like wound infections, which are more common with larger incisions in traditional surgery.

## 4. Enhanced Precision and Visualization

- Better view of the surgical area: In laparoscopic and robotic surgery, surgeons use high-definition cameras to view the inside of the abdomen. This improved visualization allows for more precise hernia repairs.
- Robotic precision: With robotic surgery, the surgeon has greater control over the instruments, thanks to the robot's advanced precision. Robotic arms can move in ways that the human hand cannot, leading to a more accurate repair.

## 5. Lower Risk of Recurrence

- Accurate mesh placement: In hernia surgery, placing a mesh to reinforce the weakened abdominal wall is crucial. MIS allows for more precise placement of the mesh, reducing the chances of recurrence.
- Better outcomes in complex cases: Both laparoscopic and robotic surgery are especially useful for more complex hernia repairs (like large or recurrent hernias), where precision is key to preventing future hernias.

## 6. Reduced Blood Loss

- Less trauma to surrounding tissues: Since MIS is less invasive, there is usually less trauma to muscles, blood vessels, and nerves, which results in less blood loss during the procedure.

## 7. Less Post-Operative Discomfort

- Reduced muscle and tissue trauma: Because the incisions are smaller and there's less disruption to the surrounding tissues, patients tend to feel less discomfort and muscle pain after surgery.

## 8. Better Cosmetic Results

- Minimal scarring: As mentioned, smaller incisions usually mean better cosmetic outcomes, especially important for people concerned about visible scars, such as in the case of abdominal hernia repairs.

## 9. Lower Risk of Blood Clots

- Less immobility: With faster recovery times and less pain, patients are often able to start moving and walking sooner after surgery, reducing the risk of complications like blood clots.

## Abdominal Wall Reconstruction (AWR)

When a hernia is large or recurrent (meaning it has happened before), AWR becomes necessary. This surgery is more complex and involves:

- Reconstruction of the abdominal wall to close the defect using muscle flaps, mesh, or both.
- Reinforcement with synthetic mesh: Often, a durable mesh is placed in the abdominal wall to prevent the hernia from coming back.
- Tissue Flaps: In some cases, surgeons may need to use tissue from another part of the body (muscle, fascia, or skin) to close large defects.

## Post-Operative Care:

- Pain Management: Pain after surgery is common, but doctors usually prescribe pain relievers to manage discomfort.
- Physical Restrictions: After surgery, it's important to avoid heavy lifting or intense activity for several weeks to allow proper healing.
- Follow-up Appointments: These are crucial to monitor for signs of complications like infection or hernia recurrence.