

## PROTOCOL FOR THE MANAGEMENT OF GROIN HERNIAS

### I. Background

Hernia is defined as a weakness in the supporting structures through which a contained organ may protrude. A hernia may be described in terms of a weakness or actual opening or defect in an enclosing layer. However, the organ need not be present within the weakness for the hernia to exist.

Groin hernias can be sub-classified into:

1. Inguinal
2. Femoral

Hernias may further be classified into:

1. Reducible
2. Non-reducible - incarcerated
3. Strangulated - where there is compromise to the blood supply to the protruding organ

Other abdominal wall or ventral hernias include:

1. Incisional/Ventral - through a prior surgical incision in the abdominal wall
2. Umbilical - through a defect at the umbilicus or belly button
3. Epigastric - defect through the linea alba above the umbilicus
4. Spigelian - through a defect at the lateral border of the rectus muscle
5. Lumbar - defect through the lateral abdominal wall

Hernias may be congenital or secondary, that is, they develop later in life. The etiology of a hernia that develops secondarily in later life is usually trauma. However the traumatic explanation may not be entirely clear. In some instance, the patient may be able to pinpoint the precise event, such as lifting a heavy object, and suddenly feeling a tear or severe pain in the groin. In other cases, the patient may only recognize a gradual bulge over years of hard work.

## II. Symptoms of Hernias

### 1. Asymptomatic

a. Many hernias are discovered only on routine physical examination, and patients have no symptoms referable to them.

### 2. Symptomatic

a. Noticeable, painless bulge in the groin which may or may not be intermittent.

b. Noticeable, painful bulge in the groin which may or may not be intermittent.

1. Pain may be quite severe initially, but usually subsides to a dull ache unless incarceration or strangulation occurs.

c. Severe generalized abdominal pain often associated with nausea and vomiting, abdominal distention, and a non-reducible bulge in the groin - which suggests incarceration and/or strangulation, causing bowel obstruction.

d. In the obese patient, actual bulge can be missed on examination, but the patient may present with symptoms and signs of bowel obstruction with no other etiology.

## III. Physical Signs

1. Hernia may not be detectable on physical examination. This is frequently the case with baby hernias, or in obese patients.

2. The defect and/or bulge can be felt in the inguinal canal. For a reducible hernia, often the patient must be in the upright position and strain, to increase the intra-abdominal pressure for the hernia to be detected. A dilated external ring does not, in and of itself, constitute the diagnosis of a hernia.

3. Signs of bowel obstruction, such as abdominal distention and tenderness, suggests incarcerated and/or strangulated hernia, in the absence of another cause.

#### IV. Differential Diagnosis of Groin Masses

1. Testicular torsion
2. Acute femoral lymphadenitis
3. Soft tissue mass, such as lipoma

#### V. Treatment

##### 1. Non-operative

a. External device or truss to maintain reduction of the hernia to prevent incarceration and/or strangulation. This is most helpful for large ventral hernias or incisional hernias and of little help in groin hernias. It does not treat the hernia, it only helps to prevent complications resulting from the hernia.

##### 2. Operative Repair

a. This should be scheduled in a timely fashion after diagnosis.

b. If there are signs or symptoms of incarceration and/or strangulation, surgery should be scheduled more urgently or emergently (usually within 24 hours).

##### c. Out-patient

1. Conventional surgical treatment is performed under local, neuroleptic(IV) sedation and local anesthesia), general anesthesia, spinal or epidural anesthesia.
2. Laparoscopic repair usually requires general anesthesia.
3. If strangulation has occurred, the patient may require conversion to a general anesthetic with full laparotomy with resection of the involved organ. The patient may need admission to the hospital following this procedure.

Most surgeons performing hernia repairs today use a tension free technique which reduces pain, reduces the risk of recurrence, and enables the patient to return to work much quicker. A tension free repair can be performed either using an open technique or a laparoscopic technique. The type of repair is usually based on the patient's anatomy, as well as the surgeons preference and expertise.

Most groin hernias can be repaired on an outpatient basis. If incarceration and/or strangulation occurs, and conversion to a laparotomy is required or a bowel resection is required, admission to the hospital is usually required, and recovery is usually longer.

#### VI. Complications Resulting from Repair of the Hernia

1. Infection-rare
2. Wound Hematoma/Seroma
3. Nerve entrapment with hypesthesias or numbness
4. Recurrence - early or late
5. Testicular ischemia/Infarction - rare

#### VII. Follow-Up

1. Patients are usually treated as outpatients with initial postoperative visit one to two weeks following the surgery. Patients may return to work at 2 weeks. For individuals who routinely lift greater than 100 lbs., 3 weeks recovery is generally required. Follow up visits beyond 2-3 weeks are generally needed if complications have occurred. Patients who undergo bilateral hernia repair, in general, should not require longer recuperative time.

#### VIII. Precautions to Prevent Recurrence from Work-Related Hernias

1. Cessation of smoking
2. Weight reduction
3. Muscle strengthening exercises, which usually do not require physical therapy
4. Learning proper techniques in lifting and bending

Protocol History:

Passed: 7/27/1993

Amended: 11/19/2002