INGUINAL HERNIA

A protrusion of abdominal-cavity contents through the inguinal canal.

⚠️ Risk factor ♂ Male & Female

ℹ️ About Inguinal hernia

An inguinal hernia happens when contents of the abdomen, usually fat or part of the small intestine, bulge through a weak area in the lower abdominal wall (Pic. 1). In general, a hernia occurs when an organ pushes through an opening in the muscle or tissue that holds it in place. It protrudes through body parts though defects in the anatomical structures that normally contains it and are most common in the abdomen (account for about 15-18% of all the surgical procedures).

Inguinal hernias can be either indirect or direct. An indirect inguinal hernia is the most common type. It often occurs in premature births, before the inguinal canal can fully develop. A direct inguinal hernia most often occurs in adults. The popular belief is that weakening muscles during adulthood lead to a direct inguinal hernia. This type of hernia is more prevalent in men. People with a history of hernias are at increased risk of having another hernia. The second hernia usually occurs on the opposite side (recurrent hernia).

Inguinal hernias usually present with a lump in the groin (Pic. 2), that normally goes away with minimal pressure or when the patient is lying down. There is a mild to moderate discomfort in the patients and pain is normally uncommon. Most of the patients who are scheduled for surgery actually do not have any pain.

The diagnosis of inguinal hernia is usually done during a physical exam by easily pushing the hernia back into abdomen when a patient is lying down. Tests such as ultrasound and CT scans (Pic. 3) are not usually needed to diagnose an inguinal hernia.

The prevalence for abdominal wall hernias among all the age groups is estimated to be 1.7% and 4% for those aged over 45 years. Inguinal hernias are among the most common of the abdominal wall hernias accounting for almost 75% with a life time risk of 27% in men and 3% in women.

Males have been reported to be more affected with inguinal hernias than females. Possible aetiological factors include conditions which can raise intra-abdominal pressure, such as chronic bronchitis (type of obstructive lung disease) or hyperplasia (increased volume of the organ or tissue) of the prostate.

Inguinal hernia surgery refers to a surgical operation for the correction of an inguinal hernia. Surgery is not generally advised in most cases if the hernia produces no symptoms; watchful waiting being the recommended option. In particular, elective surgery is no longer recommended for the treatment of minimally symptomatic hernias due to the significant risk (>10%) of chronic pain (Post herniorraphy pain syndrome).

 Symptoms

- presence of an abdominal mass that can be reintroduced into the organ sack wall (in the absence of complications)
- further manifestation of the mass during coughing, exertion or the transition to standing position
- weakness or pressure in the groin
- possible discomfort
- men can experience pain and swelling in the scrotum

 Associated diseases

- enlarged prostate
• congenital abdominal weakness
• undescended testicles
• diabetes

Complications

As the hernia progresses, contents of the abdominal cavity, such as the intestines, liver, can descend into the hernia and run the risk of being pinched within the hernia, causing an intestinal obstruction. If the blood supply of the portion of the intestine caught in the hernia is compromised, the hernia is deemed "strangulated" (disruption of blood flow) and gut ischemia (insufficient supply of blood to an organ, usually due to a blocked artery) and gangrene (tissue death which occurs due to loss of blood supply) can result, with potentially fatal consequences.

Risk factors

• lifting heavy objects
• increased abdominal pressure
• pre-existing weakness of abdominal muscles
• irregular bowel movements
• obesity
• pregnancy
• straining during defecation
• increasing age (≥50 years)
• male tender
• diabetes
• alcoholism

Prevention

Inguinal hernia can be prevented by avoiding rapid weight loss, which cause weakness in the muscles of the abdomen, by maintaining healthy weight, eating high-fibre foods such as fruit and vegetable, which helps to prevent constipation and by stopping smoking as chronic coughing from smoking increases the risk for developing a hernia. It is also advised to refrain from straining during bowel movements and urination as it causes increased pressure inside the abdomen. When lifting heavy objects, it is very important to avoid bending and twisting at the same time. Instead, be sure to face the object and bend at the knees and not the back.

How it can affect fertility

Male fertility

Hernia repair surgery is the only treatment and cure for inguinal hernia and is one of the most common surgeries done in the world every year. Men with inguinal hernia should consider the risk of complication which results from hernia repair. The inguinal obstruction which may follow groin hernia surgery leads to fertility problems in the future. If the surgery is done on both sides, left and right obstruction of spermatic cord could cause azoospermia (condition, when there is no sperm in ejaculate). Smaller probability of azoospermia is associated with only one sided surgery. The most common consequences are Spermatic granuloma formation (lump of extravasated sperm being present as a result of the pressure-induced changes) and testicular atrophy, unilateral or bilateral (pathological condition in which there is abnormal shrinkage of the testicles, either in one or in both).

Men should consider sperm cryopreservation (technique designed to preserve sperm for future use by freezing them) before they undergo the groin surgery. Cryopreservation allows to do in vitro fertilization (IVF) and intracytoplasmatic sperm injection (ICSI), if any fertility problems will appear after the surgery.

Female fertility

Inguinal hernias occur in less than 5% of women. Even though infrequent, when present, hernias must be evaluated and treated urgently due to possible incarceration (trapped organs) or strangulation (disruption of blood flow) of organs, including, on rare occasion, the ovary and fallopian tube. As with any type of laparoscopic surgery, risks are associated with hernia repair. Bleeding from vessels in the inguinal area, permanent damage to nerves, infection, adhesions, and continued pain are all potential risks.

Prognosis
Surgical repair of inguinal hernias is the most common general surgical procedure in the world. Chronic groin pain lasting more than 3 months after surgery, which is one of the most important complications occurring after inguinal hernia repair. Men with bilateral hernia repair could have a slightly increased risk for infertility compared to them with used on only one side. The cumulative incidence (measures the number of new cases per person in the population over a defined period of time) is still less than 1%.

Find more about related issues

Diagnoses

Hydrocele testis
An accumulation of clear fluid in the tunica vaginalis, the most internal of membranes containing a testicle.
Learn more at: www.fertilitypedia.org/therapy/diag/hydrocele-testis

Orchitis
An inflammation of the testes, involving swelling and heavy pains.
Learn more at: www.fertilitypedia.org/therapy/diag/orchitis

Undescended testes
In the case of cryptorchidism one or both testes are absent from the scrotum. It is the most common etiologic factor of azoospermy in the adult.
Learn more at: www.fertilitypedia.org/therapy/diag/undescended-testes

Gallery

Pic
The anatomy of inguinal hernia

Pic
A large right sided hernia.

Pic
An incarcerated inguinal hernia as seen on CT.
Sources

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