**Inguinal Hernia - Male**

What is a hernia? A hernia is a protrusion of an internal organ - usually intestine or fatty tissue inside the abdomen - through an opening in the muscular wall of the abdomen. Common hernias include inguinal and femoral (groin), umbilical (navel), and incisional (occurring through previous surgical incisions). This discussion will focus on inguinal hernias in males, although many principles pertain to all of the above.

Inguinal hernias occur most often in men, although they do occur in women as well. Contrary to popular myths, they are not a result of a particular event, such as lifting, nor are they a "rupture", or tearing of muscle. They are most frequently congenital in origin, no matter what the age of the patient, although they can also develop as an acquired problem later in life. The hernia protrudes through the inguinal canal, a natural passageway through the muscles of the groin. Prior to birth, the testicle descends from its embryological position near the kidney, down through the inguinal canal, and into the scrotum, dragging the spermatic cord behind it. The cord contains the vas deferens, the tube that carries sperm, blood vessels and nerves to and from the testicle, and muscle layers. The muscles of the inguinal canal are supposed to close around the spermatic cord snugly enough to prevent other internal organs from following the testicle down into the scrotum. A major failure of this entire process is known as an undescended testicle, usually discovered at birth or early in life. A milder failure of this mechanism shows up as an inguinal hernia, at birth, in infancy or childhood, or even later in adulthood.

Hernias most often present as a bulge in the groin, noticed one day while showering, standing, etc. They are usually not related to a particular activity or event. In most cases, there not anything the patient could have done to prevent its occurrence. Some considerations which may relate to the development of hernias are chronic (many years) straining, such as: chronic constipation, chronic cough, or chronic straining at urination, experienced with prostate disease. Again, contrary to popular belief, inguinal hernias usually are not painful, although they can cause discomfort or pressure in the groin, especially after many hours of standing. Sudden, severe pain in an inguinal hernia might suggest incarceration (hernia is stuck protruding) or strangulation (blood supply to hernia contents in impaired). In fact, the majority of inguinal hernias are reducible, meaning they can be easily pushed back in, and, in fact, usually reduce spontaneously at night, only to protrude again once the patient arises in the morning.

When not repaired, the pressure of the hernia sac, filled with intestine or other abdominal contents, protruding through the opening in the inguinal canal gradually enlarges the opening. This allows herniation of even more abdominal
contents increasing the opening more and causing further enlargement, in a vicious cycle. The rate of hernia enlargement varies a great deal from patient to patient. Some hernias will enlarge noticeably over a few months while others are stable in size over many years. On occasion, long-standing hernias may descend all the way down into the scrotal sac.

Another problem that can develop with hernias is incarceration or strangulation, mentioned earlier. This may follow a sudden strain - such as a sneeze or severe cough. A large amount of intestine or abdominal contents may push through the muscular defect and get trapped, or incarcerated.

Incarceration may be manifested by simply the inability to push the hernia back in without other symptoms. Alternatively, the hernia bulge may become painful and tender. If there is intestine caught, and it becomes obstructed from being trapped in the hernia, the patient may experience abdominal pain, nausea, vomiting, abdominal distention, and inability to pass gas or stool. This is a surgical emergency, and requires immediate hospital attention. Even more serious is strangulation, in which the blood supply to the entrapped hernia is impaired, eventually causing gangrene of the incarcerated tissue. This is more painful than incarceration, and even more urgent.

In a patient with a hernia, the chances of incarceration or strangulation are quite small - about 1%. Therefore, hernia repair is not an emergency, nor even an urgent problem. Most patients with a hernia are asymptomatic. Patients who have incarceration or strangulation require immediate access to surgical care.

Treatment options for inguinal hernias are limited. In patients without symptoms, it can be left alone. The major disadvantage of not repairing an asymptomatic inguinal hernia is that in all likelihood it will enlarge gradually over the years, so that it will eventually need to be repaired at some time. Secondly, while incarceration or strangulation is not common, they are possible and this may cause concern in some patients.

Another option, which is usually not recommended, is to wear a truss. A truss is a rigid leather or plastic belt with a firm ball designed to hold in the hernia while the belt is worn. It can be uncomfortable. Trusses were popular 40 years or so ago, when hernia surgery was much more elaborate and dangerous than it is today. Trusses are rarely used today, although they are still available if desired.

The third option is surgical repair, which is most commonly chosen, and is our recommendation in most cases. Inguinal hernia surgery today is usually done as an outpatient, with no overnight hospital stay. Your surgeon will discuss what type of anesthesia would be most appropriate for you. The type of anesthesia used depends upon a number of factors, including patient preference, patient's ability to hold comfortably still for the initial examination, as well as type of
surgery, patient's body build, whether the hernia is on one side or both, and whether it is a first time hernia or a recurrent hernia.

There are several methods of hernia repair. Your surgeon will discuss the type that is most appropriate for your individual case. In brief, there are three main methods of hernia repair. Tissue repairs use sutures to sew the defect in the muscular wall with the patient's own muscle tissues. There is usually no use of artificial materials, other than the sutures themselves. The deep sutures are permanent, while superficial sutures dissolve. These repairs have been around for the longest time and have the longest track record.

The second type of repair relies on the insertion of a piece of synthetic mesh material, such as nylon or polypropylene. Some procedures use a sheet of mesh; others use a "plug". These operations still use an open incision in the groin like the tissue repairs. However, instead of relying on suturing the body's own tissues, they rely on the piece of mesh, either sutured or stapled into place. In some of these procedures there is no suture repairing of the body's tissues at all - just the mesh insertion. In others, the tissues are sewn and the mesh added as well.

In both of these “open” repairs, an incision is made in the groin in the natural skin crease. If a sutured repair is utilized, the body's own muscular layers are gently sutured in multiple layers to create strength. Techniques are used to avoid tension on the repair which would create pain and decrease strength. If the defect is too large or if the native tissues appear too weak for a sutured repair, prosthetic mesh is used for the repair. Once the repair is completed, the skin is closed with an absorbable suture. There are no external stitches allowing for maximum comfort and usually excellent cosmetic results.

The most recently introduced type of hernia repair takes advantage of minimally invasive techniques. This is called laparoscopic hernia repair. Your surgeon may recommend a laparoscopic hernia repair as an alternative approach in some cases. The laparoscopic approach is best suited in cases of recurrence, bilateral herniation, and in other selected patients. Laparoscopy uses small incisions through which trocars (plastic tubes that cross the abdominal wall) are placed. The operation is performed using a video camera and specialized instruments placed through the trocars. The laparoscopic repair approaches the hernia from the inside, and relies on a sheet of mesh properly placed.

Open hernia repairs are done under local or regional anesthesia with an anesthesiologist present for administration of intravenous sedation and for patient monitoring. Laparoscopic repairs require general anesthesia.

For an elective inguinal hernia repair, you will arrive at the hospital several hours before your scheduled time. You will see your surgeon before being given any
sedation. You will meet the other members of the operative team including nurses, anesthesiologists, and surgical assistants.

Regardless of the type of hernia repair chosen by you and your surgeon, you will return home a few hours after the surgery. Long-acting local anesthetic will keep you comfortable the first 4 to 6 hours. Once it wears off, you will have some discomfort. The amount of discomfort after hernia repair varies among patients. Most patients have modest pain. Many take no pain medicine at all, or just some over-the-counter medicine like Tylenol, Advil, Motrin, generic ibuprofen, etc.

Your surgeon will be cross-covered by associates and colleagues on nights, weekends, holidays and vacations. This way, there is always a qualified colleague available even when your surgeon is not on duty.

Most patients are back at work in a few days. You may walk as much as you like immediately after surgery, including stairs, although you should climb slowly and infrequently the first few days. You may drive within 2 or 3 days, once you feel loose and comfortable to be able to safely control a car and you are no longer taking narcotic pain medication. You may lift up to 20 lbs if you can do so comfortably and without straining.

A post-op office visit should be scheduled for 10 – 14 days after surgery. At that time, you may begin most activities. By one month after the operation, you may gradually progress to full unlimited activities, including sports and lifting, as if the operation never happened. You might notice some tightness or light pains if you overdo it, so just listen to your body and progress as you feel comfortable - use common sense!

There is the possibility of developing another hernia in the same groin, called a "recurrent hernia", in about 1% to 5% if cases. Women have a lower recurrence rate than men. Many factors affect the rate of recurrent hernias, including age, obesity, and chronic straining, such as with constipation or chronic coughing. The technical type of hernia repair plays a role as well, but probably not as much as the factors mentioned above.

Inguinal hernia surgery is not minor surgery - but it is on the low end of major surgery. As with any operation, it does have potential risks. These risks include, but are not limited to: death, heart attack, stroke, blood clots, pneumonia, or other catastrophic complications of the vital organs; bleeding, transfusion disease, infection, or healing problems. Some patients will have temporary numbness of the groin skin for a few weeks or months after surgery. Permanent skin numbness is possible, but very uncommon. Chronic or permanent groin pain is possible. Occasionally, patients, especially older men, may have trouble urinating immediately post-op, and require a bladder catheter overnight. It is less common in younger men, and very uncommon in women.
Local complications of a hernia repair include injury to the vas deferens, a tube which carries the sperm, epididymitis - inflammation of the top of the testicle, swelling or fluid collection in the scrotal sac, and swelling, shrinkage, or, extremely rarely, loss of the testicle, due to interference with its blood supply by the hernia repair. Treatment of some of these complications may be complex and may require additional surgery or procedures.

About 10% of patients have bilateral (both sides) hernias. These patients often have both hernias repaired laparoscopically at the same time.

You are the most important person in the operating room. Your comfort and safety are our top priorities. When you arrive in the operating room, the lights may seem bright and the temperature cold. Warm blankets are available. If you have questions or concerns, please ask your surgeon or your nurse.

Once you are comfortable we have discussed the above issues to your satisfaction, please sign and date below.

Thank you. 9-07