

The evolution in hernia treatment

Surgeons have been treating patients for hernia since ancient times. They are one of the most commonly encountered surgical problems, occurring in the young and elderly, men and women alike.

They occur either because of a natural weakness in the abdominal wall or as a result of excessive strain on the abdominal wall usually caused by heavy lifting, substantial weight gain, persistent coughing, or difficulty with bowel movements or urination.

Eighty per cent of all hernias are located near the groin but they may also be found below the groin (femoral), through the navel (umbilical), and along a previous incision (incisional).

Inguinal hernias occur when soft tissue — usually part of the intestine — protrudes through a weak point or a tear in the lower abdominal wall. The inner lining of the abdomen pushes through the weakened area to form a balloon-like sac. This, in turn, can cause a loop of intestine or abdominal tissue to slip into the sac. The resulting bulge can be painful — especially when coughing, bending over or lifting heavy objects.

Although not necessarily dangerous themselves, inguinal hernias can lead to life-threatening complications, which is why in most cases doctors recommend some form of operative treatment, especially when the hernia is painful or large. The exception is in the case of very young patients when observation is often the preferred first action.

Treatment for hernias has been recorded as early as 1200BC. Yet, modern treatment methods did not begin until 1889 when Italian surgeon Edoardo Bassini described “a new operative method” to treat inguinal hernias.

Bassini's operation involves reinforcing and reconstructing the inguinal canal without the use of any foreign material but with suture thread. The natural curtain-like mechanism of the inguinal canal is recreated and the hernia sac is tied higher up.

Today, this surgery is still practiced and known as conventional open hernia repair. However, its modern-day equivalent differs largely from that of the past which involved a large abdominal incision, a long hospital stay and weeks of immobility afterwards.

The main disadvantage of the conventional open surgery is the forceful approximation of the groin tissues associated with tension on the suture line. This leads to increased postoperative pain, a longer hospital stay, delay in resuming regular physical activity and a higher chance of the hernia returning.

Twenty years ago the introduction of meshes - a sheet of synthetic material used to reinforce hernia repairs – brought a leap forward in hernia surgery. At that time, there were only few materials and designs available but scientific research in the years that followed has produced better meshes that are tailor-made for the job.

These meshes have larger pores which minimize the inflammatory response that follows with the introduction of a foreign body. They are also more elastic, reducing the stress at the interface between mesh and adjacent tissue. Some also benefit from a coating on the mesh surface that acts as a barrier and allows direct contact with the bowels if needed.

Since the introduction of prosthetic material for hernia repairs, the recurrence rate has fallen considerably and consistently. As a result, it has become an essential component of hernia surgery. In addition, the development of “lightweight” mesh material produces a stronger repair while helping reduce any reaction and feeling which may occur with the introduction of a foreign body.

Tension-free repair with keyhole surgery

The introduction of laparoscopic surgery brought another leap forward in hernia repair surgery.

Recent medical research has revealed that laparoscopic hernia repairs bring less postoperative pain, a faster resumption of daily activities, a quicker return to work, and less impairment of sensibility than the open mesh repair method.

A thin, telescope-like instrument known as an endoscope is inserted through a small incision at the navel (belly button). Two small incisions (5mm) are made to insert instruments. The abdomen is then inflated with a harmless gas (carbon dioxide) and the inner lining of abdomen is cut to expose the weakness in the abdominal wall. The mesh is attached to secure the weak area.

The lining is then stapled or sutured closed. Following the procedure, the small abdominal incisions are closed. Within a few months, the incisions are barely visible.

For selected patients, **Single Port Laparoscopic Hernia Surgery** can be applied to give a better cosmetic result and reduce postoperative pain. This involves making only one small wound around the site of the belly button which results in a less noticeable scar hidden by the navel.



Dr. Henry Kwan
Specialist in General Surgery