

SURGICAL UPDATE

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INCISIONAL HERNIAS

Incisional hernia of the anterior abdominal wall remains a common, challenging and costly surgical complication and affects all surgical disciplines. The main reason is that there is limited standardization and no gold standard for the repair, approach or material to be used.

There are many options for repair and with that comes many unanswered questions.



How common are incisional hernias?

The incidence of incisional hernia is very high and one of the most common complications after surgery. The incidence is estimated to be about 3-20% after a laparotomy. There are over 2 million laparotomies performed per

year in the U.S., resulting in an estimated 60 000 to 400 000 incisional hernias per year. An incisional hernia can follow any type of surgical incision that enters the abdomen, even from a small laparoscopic trocar. More than 50% will occur in the first year after the primary operation.

Who is at risk?

There are a complex array of patient related factors, surgery, postoperative variables and biological abnormalities that play a role in the development of a hernia. (See table 1)

The risk factors that carry the most weight include:

- Concurrent stoma/fistula
- Infected abdomen
- Recent chemotherapy
- Obesity, smoking, alcohol use
- Liver disease

How should an incisional hernia be diagnosed?

An incisional hernia is often identified by the patient as a bulge directly over or adjacent to a previous incision. Pain is not a usual presenting symptom, unless it is a complicated hernia. The natural history of an incisional hernia is to enlarge and to become symptomatic. The fascial defect can often be palpated. The size of the hernia sac and contents are often large, even though the fascial defect may be small.



CT scan off a patient with loss of abdominal domain

Ultrasonography is commonly used to confirm the diagnosis and also to detect occult defects. It helps to estimate the size of the defect and can give clues regarding the contents of the sac.

Detailed diagnostic imaging (CT scan) is indicated in the following:

- Obese patients (BMI >35)
- Recurrent incisional hernias
- Loss of abdominal domain (where the viscera permanently resides outside the abdominal cavity)
- Pain in the abdominal wall, with no clinical hernia

Does an incisional hernia have to be fixed?

The indication for repair is the presence of an incisional hernia in a patient that would tolerate surgery.

The risk of surgery must be balanced against the risk of complications if the hernia is left untreated. Unfortunately, there is scant level 1 evidence on the risk of major complications from untreated hernias.

Untreated hernias do enlarge with time and this makes the repair more difficult.

Complications of a hernia are uncommon, but devastating if they occur.

An emergency repair of a hernia carries a 47% increased risk for complications and a 20 times higher risk for mortality (death) if compared with an elective repair.

Patients with a symptomatic hernia should therefore be offered elective surgical repair. *Continued overleaf*

Table 1: RISK FACTORS OF INCISIONAL HERNIA	
Patient related factors	Age: more than 60 years Gender: Male Obesity: BMI>25kg/m ² Co morbidities: Diabetes, mellitus, chronic lung diseases, obstructive jaundice, immuno supression in organ transplant patients, Chemotherapy and Steroid therapy
Surgery related factors	Emergency operations, bowel surgery, abdominal aortic aneurism, stoma closure, operations for peritonitis, re-laparotomy
Biological factors	Collagen and metalloproteinase synthesis, Smoking, Nutritional deficiencies

Prevention of incisional hernia

The risk for a hernia cannot be eliminated but can be minimized, by reducing systemic risk factors of the patient, especially smoking, obesity, diabetic management and nutritional deficiencies. This may even require surgery to be delayed.

Surgical technique can assist in the prevention of hernias, for example a transverse incision has significant decreased incidence compared to a vertical incision. It is thought that there is less tension and that the tension on the suture lies perpendicular to the orientation of fibers in the abdominal wall fascia, therefore the suture is less likely to pull through.

How can a hernia be fixed?

Repair of incisional hernia has changed as technology has advanced.

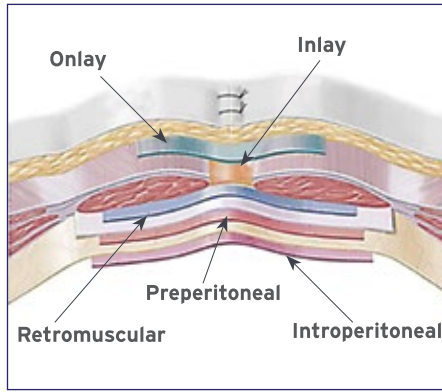
Access to the defect can be obtained either with an open technique or laparoscopically (key hole surgery) from the side.

The use of prosthetic material (mesh) has shown to be superior to primary approximation with sutures in terms of recurrence. The use of mesh does however, carry a higher risk for infection and seroma formation.

Most surgeons will not perform a laparoscopic approach for a defect in the fascia of over 10 cm, for reasons of difficulty in technique (larger defects have less overlap which is needed to prevent recurrence) and poor cosmetic result due to the fact that the hernia sac is not completely excised. In the laparoscopic approach the mesh is placed intra-peritoneal also referred to as IPOM (intra-peritoneal onlay mesh)

The laparoscopic hernia repair has been shown to be as safe as the open technique.

In open repairs, 3 principal types of mesh placement have been described: onlay, inlay and sublay. There are



In open repairs there has been 3 principle types described, with modifications of all 3 known. Onlay, inlay and sublay.

modifications of all three techniques.

Recently, a modification of the sublay technique has become very popular, and is called a sub rectus or retromuscular repair. This is now accepted by the International and European hernia associations as the gold standard. This technique is more technical and does result in longer operating times.

The sub rectus technique has an added option of a muscle release that can be performed in the transversalis muscle.



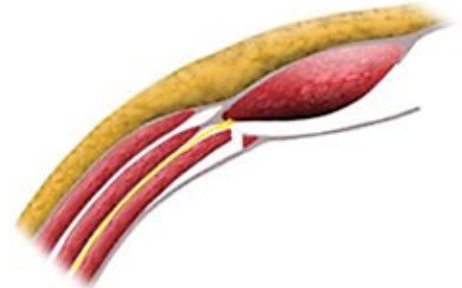
This is of particular help in the large hernias, and specifically in the hernias with loss of abdominal domain.

The incision is made just medial to the neuromuscular bundle supplying the rectus muscle. This gives the surgeon extra stretch and less tension for closure of the posterior rectus sheath in the midline. A mesh can then be placed over the posterior rectus sheath and under the rectus muscle.

Remarkably, this repair is associated with very limited pain, even less than a large hernia repair done laparoscopically. Smaller hernias have similar pain done with either methods.

Summary

- Incisional hernias are a common complication of abdominal surgery.
- Elective repair is preferable.
- The newer subrectus or retromuscular repair is the technique of choice
- Laparoscopic repair is generally reserved for smaller hernias



Incision is made just medial of the neuromuscular bundle supplying rectus muscle



A mesh can then be placed over the posterior rectus sheath and under the rectus muscle.



Before and after pictures of a laparoscopic IPOM repair

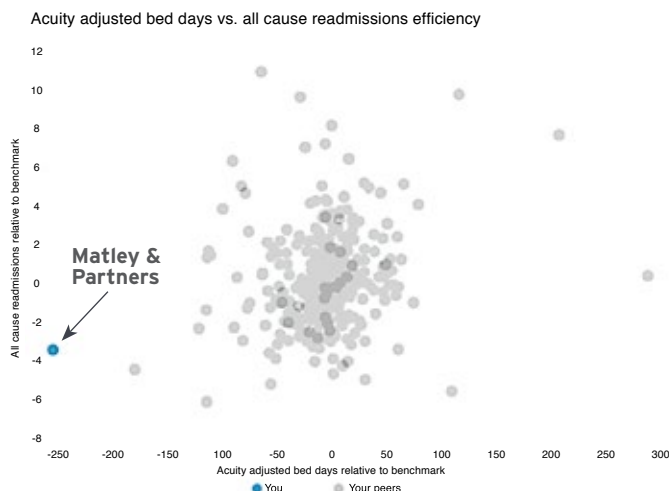
MATLEY & PARTNERS IS THE TOP PERFORMING SURGICAL PRACTICE IN THE COUNTRY

Achieving good outcomes in surgical practice is a team effort. We are particularly indebted to our physician and anaesthesiologist colleagues without whom we could not function.

As a practice we would like to share with you the results of a recent audit of outcomes and efficiencies for 463 surgical practices in South Africa conducted by Discovery Health. This information is completely unsolicited, but we are very proud of the results and wish to share it with you.

The 5 most common surgical admissions/procedures (appendicectomy, cholecystectomy, hernias, anal procedures and varicose veins) were studied for the twelve-month period January-December 2016. Total hospital length of stay and readmission rates were found to be the best measures.

On this measure, Matley & Partners is the best performing surgical practice out of the audited practices in the country.



The above scatter-gram plots length of stay on the x-axis and readmission rate on the y-axis. Each of the 463 practices is represented by one dot. The closer the dot is to the upper right, the worse the performance. The ideal is to be closest to bottom left.

A WARM WELCOME TO:

MARK HAMPTON

MBChB (STELL) FCS (SA) MMED (UCT) FRCS (ED)

Mark will be joining the team at Matley and Partners General Surgery practice on 1 September 2017, based mainly out of Constantiaberg Hospital. He matriculated from Rondebosch Boys' High School in 1997 and commenced his undergraduate degree at Stellenbosch University the following year. He was awarded the MBChB degree in 2003, with a distinction in Surgery. In 2004 he completed his internship training at Groote Schuur Hospital, and spent his community service year in the Eastern Cape in 2005. He continued on at Frere Hospital from 2006 as a medical officer in the Department of Surgery. He spent two and a half happy years there, and was inspired to pursue a career in Surgery.

Mark commenced General surgical training at Groote Schuur Hospital in 2009, and finished in 2013, completing the Fellowship of the College of Surgeons of South Africa, as well as the Master of Medicine Degree in Surgery from the University of Cape Town. He also wrote the exit examination for the Royal College of Surgeons of Edinburgh, and was awarded the medal for the best international candidate, in November 2013.

He completed a consultant rotation through the Breast and Endocrine Unit at Groote Schuur Hospital, where he developed his interest in breast surgery,



which he plans to continue as a partner in the practice. Mark then spent a year as a consultant in the Colorectal unit at Groote Schuur Hospital, developing skills in both open and laparoscopic colorectal procedures, as well as colonoscopy and proctology. He has developed this aspect of his practice further after being awarded the prestigious SASES Karl-Storz award, to complete a fellowship in Straubing, Germany where he received further training in laparoscopic general surgical procedures.

Mark has been the Head of the Department of Surgery at Victoria Hospital in Wynberg for almost 3 years; an appointment he took up after completing his time at Groote Schuur Hospital. Here he re-established registrar training and a formal academic programme, set up outreach to False Bay Hospital, including extending the breast cancer surgery service there, and expanded the endoscopy service. He also initiated the first laparoscopic colorectal procedures to be performed at Victoria Hospital. He set up a number of training lists where expert local surgeons were invited to teach registrars to perform laparoscopic inguinal hernia repairs.

Mark has authored and co-authored a number of surgical papers, and is currently involved in a large international research grant investigating antibiotic-prescribing practices along surgical pathways. He has given numerous oral presentations at local and national surgical conferences. He is looking forward to bringing his expertise in breast surgery, as well as all aspects of general surgery, to the Matley and partners practice at Constantiaberg.

He is married to Robyn, an Ophthalmologist at Tygerberg Hospital, and they have 2 wonderful children, Joseph and Lily. When Mark is not working, he is an avid reader, and enjoys most sports, fishing and the outdoors, as well as wine tasting and spending time with his young family.

ANTARCTICA



Prof Bob had the trip of a lifetime down to Antarctica on the Dutch owned, 105 year old “tall-ship” Bark Europa during the summer of 2015/16. He crewed as the Ship’s surgeon and an official Antarctica guide. Europa is sailed by 16 trained young crew and accommodates 42 “voyage crew”, who are tourists seeking adventure and share the watches and duties. During a refit in Duncan Dock, the owners, weary of the usual rather dull and serious Dutch medics, heard about Bob and reckoned he was just the sort of slightly off-beat medic to fit in with the young crew. The journey began in Punto Arenas in Patagonia, and after sailing the Magellan straits and Beagle passage; they spent Boxing Day picnicking on a sunny Cape Horn with an Andean condor overhead. There followed a 24-day voyage to 65.50°S where the pack ice stopped them.

In preparation, Bob qualified as an official Antarctic guide, which meant all free time was consumed studying a 1200 page syllabus with a 3 hour on-line exam (80% pass required) at the end. It meant he was always on the zodiacs with the tourists, as



well as giving lectures, including a favourite one he borrowed from Syd Cullis our retired partner, entitled “The surgical history of Antarctica” - a series of hair-raising adventure stories!

The medical duties involved the usual sea-sickness, a frozen shoulder, a severe relapse of chronic fatigue syndrome, cuts and

sprains and cold induced injuries...that is until on the return crossing the Drake passage when a 120kg diabetic, despite antibiotics, started becoming septic from a huge furuncle near his anus. The ship has no sick-bay, so the operation took place behind the bridge on the chart-room table, covered with towels, and a ship’s bucket of antiseptic on the floor. Captain Eric was the nurse and the 5x5cm necrotic specimen was cored out of the courageous sailor as the ship heaved across the Southern Ocean cross swells in high winds. A large draft of Ship’s grog provided post-op analgesia.

Bob rejoins Europa this summer for a 34 day voyage from the Falklands to South Georgia, the Weddell Sea, Elephant Island, the Antarctic Peninsula and Deception Island.

