Shouldice Hospital:

Dedicated to the Repair of Hernias

By Beth Stobie, RN, CPN (C)

Dr. Earle Shouldice founded the Shouldice Hospital, a private facility dedicated to the repair of hernias, in 1945. The first hospital opened in a converted house on Church Street in Toronto with a single operating room. As requests for his unique surgery increased, he bought the three adjacent buildings. Finally, in 1953 he purchased a beautiful country estate North of Toronto in Thornhill, and a second hospital was established. In 1969 an eighty-nine bed facility, designed to encourage maximum ambulation and minimize the atmosphere that patients associate with hospitals, was opened at the Thornhill site, and the downtown hospital was closed.

Dr. E. B. Shouldice, the son of the founder, joined the staff in 1962, and it was his planning that created the new hospital. Today ten full-time surgeons perform approximately 7,400 hernia repairs annually in the five operating rooms.

Anatomy of a Hernia

A hernia is an abnormal protrusion of tissue, an organ, or part of an organ, beyond its normal confines through a congenital or acquired defect. Intra-abdominal structures may protrude through the diaphragm, the pelvic floor, or the external abdominal wall. The Shouldice Hospital specializes in the repair of external abdominal wall hernias, which depending on their location, may be classified as indirect, direct, femoral, umbilical, epigastric, interstitial, or incisional. Other rare types are spigelian, lumbar and obturator.

In each groin area is an inguinal canal which contains the spermatic cord in males, and the round ligament in females. The inguinal canal has a natural entrance, then a passageway through the abdominal wall, and then an exit. The posterior wall of the inguinal canal is called the "canal floor". The entire floor must be exposed and it should be split at least halfway for a more effective repair.

- An indirect hernia gets into the inguinal canal through the entrance.
- A direct hernia gets into the canal by breaking through the floor of the passageway.
- A femoral hernia comes through the passageway that the femoral vessels use to get into the leg.
- An interstitial hernia breaks through the abdominal wall muscles anywhere other than the previously named sites.
- An incisional hernia is the result of previous surgery.

Hospitalization and Pre-Operative Procedures

While it is true that men get hernias more often than women, we have operated on men and women of all ages. The number of men to women is a ratio of nine to one (9 to 1).

Patients are seen by the surgeons in the office, which is a walk-in clinic, and any questions are answered. Patients are booked for surgery and given dates for their operations. A patient who is overweight will be instructed to reduce half the excess weight prior to admission. This makes the surgery easier for both the surgeon and the patient, and reduces the risk of recurrence. Better quality tissues under less tension permit a more effective overlapping repair. Concomitant medical problems are stabilized prior to admission.

Today, in the era of increasing outpatient surgery, we appear to be ultra-conservative, as we admit our patients the day before surgery and keep them in the hospital until the second or third postoperative day. A four day stay at the Shouldice Hospital costs less than one day at a General Hospital. We consider outpatient abdominal surgery analogous to driving a car without insurance - no problem if nothing goes wrong - but the situation is totally unpredictable for the first 48 - 72 hours postoperatively.

We are convinced that elderly, and even otherwise healthy young patients, benefit both physically and psychologically from a short period of supervised convalescence. The patients are admitted the afternoon before their surgery; and at that time their general state of health is re-examined.

Anesthesia

We use local infiltration of 1% or 0.5% *Novocain* without *Epinephrine* for 97% of our groin operations. The patient is sedated with *Diazepam* (10-20 mg) orally 90 minutes preoperatively and *Demerol* (25-100 mg) intramuscularly 45 minutes preoperatively. Local anesthesia allows demonstration of the hernia and testing of the repair, if desired, while the operation is in progress. It is a safer anesthetic for the elderly and for patients with cardiac or pulmonary disease. It permits the earliest possible ambulation, the ability to walk away from the operating table, and deep breathing and coughing without discomfort in the immediate postoperative period.

General anesthetics are done for very nervous patients, incisional hernias, and several time recurrent cases which would be too difficult to do under local anesthesia. The hospital has two anesthetists on staff. One gives the general anesthetics, while the other is on standby for the remaining patients.

Bilateral inguinal hernias in children are repaired simultaneously under a general anesthetic. All others, repaired under local anesthesia, are scheduled forty-eight hours apart. Postoperative discomfort is less, and repair of the second hernia remains an option. Occasionally the patient decides to return at a later date if the hernia is small and still asymptomatic.

Operative Procedures

On the day of surgery, patients walk to the pre/post operative room, where they receive their Valium and Demerol. They walk to the operating room assisted by the surgeon and the assistant, and are settled on the OR table. The circulating nurse greets the patient and introduces herself and the scrub nurse. She attaches the ECG leads and pulse oximeter, and checks the blood pressure.

The circulating nurse stays with the patient at the head of the OR table and monitors them throughout the surgery; note that there is an anesthetist on stand by. Patients are encouraged to bring their favorite CD's, which we will play for them during the procedure to help put them at ease. A normal case takes approximately three quarters of an hour.

In the case of a general anesthetic, a nurse is assigned to help the anesthetist start the case, and when the patient is asleep, goes to the Central Service Room to help prepare supplies. She returns to the OR at the end of the procedure and accompanies the patient to the recovery room, monitors the recovery, then transports him or her back to his/her room on the floor with a surgilift.

Regardless of the type of groin hernia, the entire groin region must be explored. Recognition of the anatomy, both normal and abnormal, and thorough dissection are absolutely essential. Multiple hernias on the same side are found in 13 percent of groin hernias.

We use four lines of 34 or 32 gauge stainless steel wire for the repair of the posterior wall of the inguinal canal. Continuous sutures distribute tension evenly, and leave no gaps. Stainless steel wire is inert in the tissues and provides a strong repair.

The muscles of the groin portion of the abdominal wall are arranged in three distinct layers, the external oblique, the internal oblique, and the transversus. We repair the defect, each layer in turn, by overlapping the muscle margins. Mesh is used in extremely rare cases where there has been destruction of the tissue. When it is required and the bowel can be covered with peritoneum, Trelex polypropylene mesh is sewn in with prolene sutures. When the bowel is exposed, Gortex is used instead to avoid adhesions. The mesh is placed below the defect as an underlay.

We use absorbable sutures for the subcutaneous

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closure, and Michel clips for the skin. These clips are removed within forty-eight hours.

In our central service room the RN's make up the local anesthetic *Novocain* solutions. The RN's and RPN's make the wire sutures and sterilize all the supplies needed for surgery. There are three instrument aides who help process instruments and make up the carts which hold supplies for the operating rooms. Normally we do about thirty cases a day.

Post Operative

The local anesthetic patients walk away from the operating table assisted by the surgeon and the assistant, and are then taken back to their rooms in wheelchairs by one of the recovery room nurses. Patients who have had extra sedation such as *Versed* or *Fentanyl* may stay in the recovery room for half an hour or more until ready to return to their rooms on the floor.

The patient remains in bed for four hours postoperatively and then sits at the side of the bed for twenty minutes, before getting up to walk with the aid of a floor nurse. Patients are encouraged to walk as much as possible. They remain on the floor for dinner the day of the surgery, but starting the next day they go to the dining room for meals and participate in a gentle exercise program.

On the first postoperative day half of the Michel clips are removed, and the rest are taken out the following day. The patient goes home on the third postoperative day, usually able to carry on normal life with full unrestricted activities.

Summary

The Shouldice Hospital has been dedicated to the repair of hernias for over fifty-four years, processing over 250,000 cases in that time. The procedure used has been continually refined over the years, and the recurrence rate is less than one percent (1%). Qualified medical personnel from all over the world visit frequently to observe our method of hernia repair.

References

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Shouldice Hospital Brochure.
Visit the Shouldice Web Site, www.shouldice.com

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