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### Incisional Hernia Repair

#### Definition

Incisional hernia repair is a surgical procedure performed to correct an incisional hernia. An incisional hernia, also called a ventral hernia, is a bulge or protrusion that occurs near or directly along a prior abdominal surgical incision. The surgical repair procedure is also known as incisional or ventral herniorrhaphy.

#### Purpose

Incisional hernia repair is performed to correct a weakened area that has developed in the scarred muscle tissue around a prior abdominal surgical incision, occurring as a result of tension (pulling in opposite directions) created when the incision was closed with sutures, or by any other condition that increases abdominal pressure or interferes with proper healing.

#### Demographics

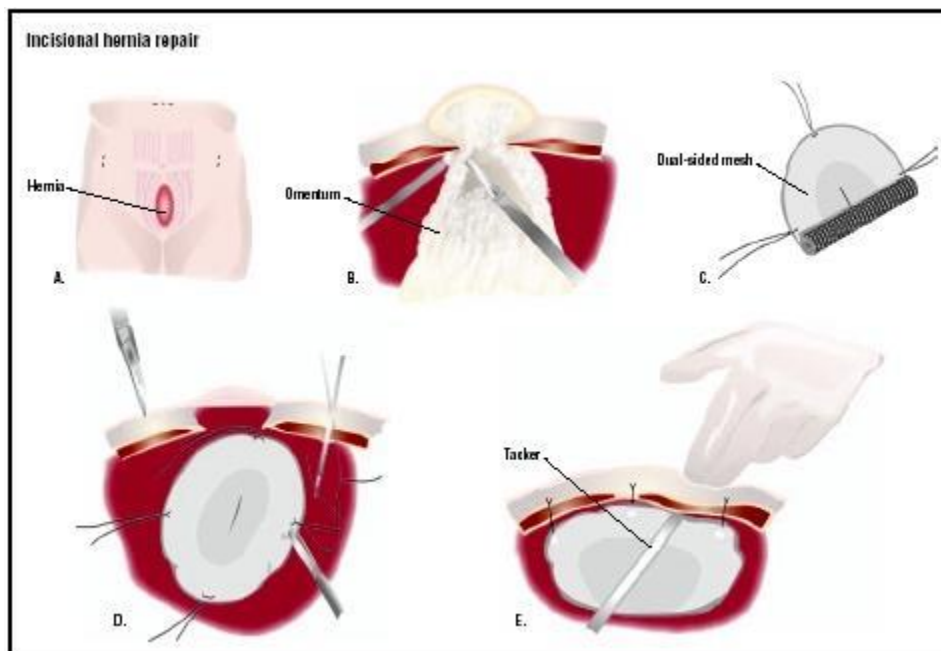
Because incisional hernias can occur at the site of any type of abdominal surgery previously performed on a wide range of individuals, there is no outstanding profile of an individual most likely to have an incisional hernia. Men, women, and children of all ages and ethnic backgrounds may develop an incisional hernia after abdominal surgery. Incisional hernia occurs more commonly among adults than among children.

#### Description

An incisional hernia can develop in the scar tissue around any surgery performed in the abdominal area, from the breastbone down to the groin. Depending upon the location of the hernia, internal organs may press through the weakened

The rate of occurrence can

be as high as 13%



*An incisional hernia occurs at the site of a previous incision (A). Intestinal contents break through the abdominal wall and bubble up under the skin. In a laparoscopic repair, the surgeon uses laparoscopic forceps to pull the material, omentum, from the hernia site (B). A mesh pad is inserted into the site to line the hernia site (C and D), and is tacked into place (E). (Illustration by GGS Inc.)*

*with some abdominal surgeries. These hernias may occur after large surgeries such as intestinal or vascular (heart, arteries, and veins) surgery, or after smaller surgeries such as an appendectomy or a laparoscopy, which typically requires a small incision at the navel. Incisional hernias themselves can be very small or large and complex, involving growth along the scar tissue of a large incision. They may develop months after the surgery or years after, usually because of inadequate healing or excessive pressure on an abdominal wall scar. The factors that increase the risk of incisional hernia are conditions that increase strain on the abdominal wall, such as obesity, advanced age, malnutrition, poor metabolism (digestion and assimilation of essential nutrients), pregnancy, dialysis, excess fluid retention, and either infection or hematoma (bleeding under the skin) after a prior surgery.*

*Tension created when sutures are used to close a surgical wound may also be responsible for developing an incisional hernia. Tension is known to influence poor healing conditions because of related swelling and wound separation. Tension and abdominal pressure are greater in people who are overweight, creating greater risk of developing incisional hernias following any abdominal surgery, including surgery for a prior inguinal (groin) hernia. People who have been treated with steroids or chemotherapy are also at greater risk for developing incisional hernias because of the affect these drugs have on the healing process.*

*The first symptom a person may have with an incisional hernia is pain, with or without a bulge in the abdomen at or near the site of the original surgery. Incisional hernias can increase in size and gradually produce more noticeable symptoms. Incisional hernias may or may not require surgical treatment.*

*The effectiveness of surgical repair of an incisional hernia depends in part on reducing or eliminating tension at the surgical wound. The tension-free method used by many medical centers and preferred by surgeons who specialize in hernia repair involves the permanent placement of surgical (prosthetic) steel or polypropylene mesh patches well beyond the edges of the weakened area of the abdominal wall. The mesh is sewn to the area, bridging the hole or weakened area beneath it. As the area heals, the mesh becomes firmly integrated into the inner abdominal wall membrane (peritoneum) that protects the organs of the abdomen. This method creates little or no tension and has a lower rate of hernia recurrence, as well as a faster recovery with less pain. Incisional hernias recur more frequently when staples are used rather than sutures to secure mesh to the abdominal wall. Autogenous tissue (skin from the patient's own body) has also been used for this type of repair.*

*Two surgical approaches are used to treat incisional hernias: either a laparoscopic incisional herniorrhaphy, which uses small incisions and a tube-like instrument with a camera attached to its tip; or a conventional open repair procedure, which accesses the hernia through a larger abdominal incision. Open procedures are necessary if the intestines have become trapped in the hernia (incarceration) or the trapped intestine has become twisted and its blood supply cut off (strangulation). Extremely obese patients may also require an open procedure because deeper layers of fatty tissue will have to be removed from the abdominal wall. Mesh may be used with both types of surgical access.*

*Minimally invasive laparoscopic surgery has been shown to have advantages over conventional open procedures, including:*

- *reduced hospital stays*

- *reduced postoperative pain*
- *reduced wound complications*
- *reduced recovery time*

### **Surgical Procedure**

*In both open and laparoscopic procedures, the patient lies on the operating table, either flat on the back or on the side, depending on the location of the hernia. General anesthesia is usually given, though some patients may have local or regional anesthesia, depending on the location of the hernia and complexity of the repair. A catheter may be inserted into the bladder to remove urine and decompress the bladder. If the hernia is near the stomach, a gastric (nose or mouth to stomach) tube may be inserted to decompress the stomach.*

*In an open procedure, an incision is made just large enough to remove fat and scar tissue from the abdominal wall near the hernia. The outside edges of the weakened hernial area are defined and excess tissue removed from within the area. Mesh is then applied so that it overlaps the weakened area by several inches (centimeters) in all directions. Non-absorbable sutures (the kind that must be removed by the doctor) are placed into the full thickness of the abdominal wall. The sutures are tied down and knotted.*

*In the less-invasive laparoscopic procedure, two or three small incisions will be made to access the hernia site—the laparoscope is inserted in one incision and surgical instruments in the others to remove tissue and place the mesh in the same fashion as in an open procedure. Significantly less abdominal wall tissue is removed in laparoscopic repair. The surgeon views the entire procedure on a video monitor to guide the placement and suturing of mesh.*

### **Diagnosis/Preparation**

#### **Diagnosis**

*Reviewing the patient's symptoms and medical history are the first steps in diagnosing an incisional hernia. All prior surgeries will be discussed. The doctor will ask how much pain the patient is experiencing, when it was first noticed, and how it has progressed. The doctor will palpate (touch) the area, looking for any abnormal bulging or mass, and may ask the patient to cough or strain in order to see and feel the hernia more easily. To confirm the presence of the hernia, an ultrasound examination or other scan such as computed tomography (CT) may be performed. Scans will allow the doctor to visualize the hernia and to make sure that the bulge is not another type of abdominal mass such as a tumor or enlarged lymph gland. The doctor will be able to determine the size of the defect and whether or not surgery is an appropriate way to treat it. A referral to a surgeon will be made if the doctor believes that medical treatment will not effectively correct the incisional hernia.*

#### **Preparation**

*Many months before the surgery, the patient's doctor may advise weight loss to help reduce the risks of surgery and to improve the surgical results. Control of diabetes and smoking cessation are also recommended for a better surgical result. Close to the time of the scheduled surgery, the patient will have standard preoperative blood and urine tests, an electrocardiogram, and a chest x ray to make sure that heart and lungs and major organ systems are functioning well. A week or so before surgery, medications may be discontinued, especially aspirin or anticoagulant (blood-thinning) drugs. Starting the night before surgery, patients must not eat or drink anything. Once in the hospital, a tube may be placed into a vein in the arm (intravenous line) to deliver fluid and medication during surgery. The patient will be given a preoperative injection of antibiotics before the procedure. A sedative may be given to relax the patient.*

#### **Aftercare**

*Immediately after surgery, the patient will be observed in a recovery area for several hours, for monitoring of body temperature, pulse, blood pressure, and heart function, as well as observation of the surgical wound for undue bleeding or swelling. Patients will usually be discharged on the day of the surgery; only more complex hernias such as those with incarcerated or strangulated intestines will require overnight hospitalization. Some patients may have prolonged suture-site pain, which may be treated with pain medication or anti-inflammatory drugs. Antibiotics may be prescribed to help prevent postoperative infection.*

*Once the patient is home, the hernia repair site must be kept clean, and any sign of swelling or redness reported to the surgeon. Patients should also report a fever or any abdominal pain. Outer sutures may have to be removed by the surgeon in a follow-up visit about a week after surgery. Activities may be limited to non-strenuous movement for up to two weeks, depending on the type of surgery performed. To allow proper healing of muscle tissue, hernia repair patients should avoid heavy lifting for at least six to eight weeks after surgery, or longer as advised.*

### **Risks**

*Long-term complications seldom occur after incisional hernia repair. Short-term risks are greater with obese patients or those who have had multiple earlier operations or the prior placement of mesh patches. The risk of complications has been shown to be about 13%. The risk of recurrence and repeat surgery is as high as 52%, particularly with open procedures or those using staples rather than sutures for wound closure. Some of the factors that cause incisional hernias to occur in the first place, such as obesity and nutritional disorders, will persist in certain patients and encourage the development of a second incisional hernia and repeat surgery. Each subsequent time, the surgery will become more difficult and the risk of complications greater. Postoperative infection is higher with open procedures than with laparoscopic procedures.*

### **Postoperative complications may include:**

- *fluid buildup at the site of mesh placement, sometimes requiring aspiration (draining off)*
- *postoperative bleeding, though seldom enough to require repeat surgery*
- *prolonged suture pain, treated with pain medication or anti-inflammatory drugs*
- *intestinal injury*
- *nerve injury*
- *fever, usually related to surgical wound infection*
- *intra-abdominal (within the abdominal wall) abscess*
- *urinary retention*
- *respiratory distress*

### **Normal Results**

*Good outcomes are expected with incisional hernia repair, particularly with the laparoscopic method. Patients will usually go home the day of surgery and can expect a one- to two-week recovery period at home, and then a return to normal activities. The American College of Surgeons reports that recurrence rates after the first repair of an incisional hernia range from 25–52%. Recurrence is more frequent when conventional surgical wound closure with standard sutures (stitches) is used. Recurrence after open procedures has been shown to be less likely when mesh is used, although complications, especially infection, have been shown to increase because of the larger abdominal incisions. Laparoscopy with mesh has shown rates of recurrence as low as 3.4%, with fewer complications as well.*

### **Morbidity and Mortality Rates**

*Deaths are not reported resulting directly from the performance of herniorrhaphy for incisional hernia.*

### **Alternatives**

*The alternatives to first-time and recurrent incisional hernia repair begin with preventive measures such as:*

- *Losing weight; maintaining suitable weight for age and height.*
- *Strengthening abdominal muscles through regular moderate exercise such as walking, tai chi, yoga, or stretching exercises and gentle aerobics.*
- *Reducing abdominal pressure by avoiding constipation and the buildup of excess body fluids, achieved by adopting a high-fiber, low-salt diet.*
- *Learning to lift heavy objects in a safe, low-strain way using arm and leg muscles.*
- *Controlling diabetes and poor metabolism with regular medical care and dietary changes as recommended.*
- *Eating a healthy, balanced diet of whole foods, high in essential nutrients, including whole grains, fruits and vegetables, limited meat and dairy, and eliminating prepared and refined foods.*

**NB!!! IF THE WARD DID NOT BOOK A FOLLOW-UP APPOINTMENT, PLEASE CALL THE ROOMS TO DO SO.**