International Surgery Journal
Delgado GEM et al. Int Surg J. 2023 Apr;10(4):810-813
http://www.ijsurgery.com
pISSN 2349-3305 | eISSN 2349-2902

DOI: https://dx.doi.org/10.18203/2349-2902.isj20231005

Review Article

Review of incisional hernias

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Received: 05 March 2023
Accepted: 20 March 2023

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ABSTRACT

The 10 to 15% of patients get incisional hernias following any type of abdominal wall incision, with midline wounds carrying a larger risk (3 to 20%). Infection at the surgery site, obesity, smoking, malnutrition, and poor surgical technique are risk factors. Clinical signs include an abdominal bulge at or near a prior incision, which, in non-obese individuals, is frequently identified by palpating the split borders of the fascial defect. CT imaging is particularly useful for complicated ventral hernias, which are characterized by enormous size or considerable loss of dominance. For the purpose of detecting any contents within the hernia sac and deciding whether preoperative abdominal expansion is necessary to lower the risk of postoperative abdominal compartment syndrome, preoperative CT imaging is crucial. When clinically necessary, surgeons should think about making an incision outside the midline and employ the proper fascia closure procedures to lower the likelihood of an incisional hernia. Although the implantation of preventative mesh during the closure of abdominal incisions is being studied, routine usage is not advised owing to probable long-term problems. Incisional hernias can be treated surgically or expectantly, and the patient should be informed of both options.

Keywords: Abdominal wall, Surgery, Incisional hernia

INTRODUCTION

An incisional hernia develops when a weak spot in the abdominal wall permits tissue to push through the muscles and skin of the abdomen, often intestines or fatty tissue. Painful, uncomfortable, and even potentially fatal consequences including intestinal blockage or strangling can result from this.[1]

After abdominal surgery, incisional hernias can form weeks, months, or even years later, and their risk rises with conditions including obesity, smoking, and surgical site infections. Patients could feel pain or discomfort at the hernia's location as well as have a bulge or swelling in the abdomen, especially while straining or lifting.[2]

Incisional hernias can, fortunately, be repaired surgically. During the treatment, the abdominal wall is strengthened with a mesh to give support and stop additional herniation. Surgery may be performed using open or minimally invasive procedures, necessitating a hospital stay and recuperation period, depending on the size and severity of the hernia.[3]

Incisional hernia repair carries some risks, including infection, bleeding, and recurrence, much like any surgical procedure. Yet, the majority of patients receive a satisfactory outcome and symptom alleviation with the right diagnosis, planning, and surgical technique.[4]

EPIDEMIOLOGY

The 10 to 15 percent of people who have had an abdominal incision in the past have an incisional hernia. It happens when the fascia that covers the incision ruptures, allowing the abdominal contents to protrude through the wound. Incisional hernia incidence varies

based on the kind and location of the incision, as well as patient and technical variables.[5]

Incisional hernias are more common in midline incisions, with vertical incisions having a larger risk than transverse/oblique ones. Compared to lower abdominal wounds, upper abdominal incisions are similarly more prone to hernias. Incisional hernias can also form at the locations of a laparoscopic trocar.[6]

Comorbid illnesses including old age, obesity, smoking, malnutrition, immunosuppressive medication, and connective tissue diseases are among the patient variables that raise the risk of incisional hernia. Obesity is perhaps the most relevant issue, as it has been related with higher chances of incisional hernia development and incarceration, as well as problems and recurrences after hernia treatment. [7]

An incisional hernia might also be more likely to arise due to technical aspects of abdominal surgery. Risk factors include things like wound infection, inadequate fascial closure, abdominal fascia dehiscence, and particular kinds of abdominal surgery.[8]

Using information from extensive retrospective investigations, models have been created that may forecast a patient's likelihood of having an incisional hernia. For certain procedures including colorectal, bariatric, gastrectomy, and gynecological surgery, predictive models have been developed. Determining which individuals are most likely to develop an incisional hernia might assist guide choices regarding the procedure's approach and aftercare.[9]

Up to 10 years following surgery, an incisional hernia might appear. In the location of a prior incision, patients typically notice a bulge in the abdominal wall. This discomfort might exacerbate with coughing or pushing. During a physical examination, a bulge should be felt for and a bulge should be looked for. Several hernias may also be present. Massive or complicated hernias may involve intestine outside the abdominal cavity and cause breathing issues, changed body image, and chronic back discomfort. Large hernias' skin lining may exhibit symptoms of ulceration or inflammation.[10]

DIAGNOSIS

In people without obesity, an incisional hernia may often be identified by clinical examination. An incisional hernia should be suspected when a patient has a history of prior abdominal surgery, abdominal pain or discomfort, and an abdominal bulge. A lump at or near the location of the prior incision can be felt to confirm the diagnosis, and when the patient relaxes their abdominal wall muscles, a distinct fascial defect can be seen.[11]

A computed tomography (CT) scan of the abdomen and/or pelvis is advised for patients with suspected incisional hernias that cannot be verified by physical examination in order to confirm the presence of a hernia and to detect any contents that may be present inside the hernial sac. Although ultrasonography has also been mentioned as a potential method for assessing abdominal wall hernias, it is typically less accessible than CT and more operator-dependent.[12]

Complex ventral hernias defined by big size (more than 10 cm wide) and/or severe loss of domain are more likely to require preoperative CT scans (20 to 30 percent of viscera residing outside the abdominal cavity in the hernial sac). When a sizable portion of the viscera is returned to the constrained space of the abdominal cavity following surgery for these types of hernias, patients are more likely to experience major complications like abdominal compartment syndrome. These hernias frequently necessitate advanced abdominal wall reconstruction techniques, such as component separation.[12]

The morphology, content, quality of the abdominal musculature, and any comorbid diseases that would make healing more difficult can all be determined using CT images. Surgeons can more accurately determine the possible scope of the repair procedure (e.g., simple repair vs component separation) and whether to refer a patient to a center of excellence specialized in abdominal wall reconstruction by understanding the exact position and extent of the hernia.[12]

Patients may occasionally have an abdominal protrusion but no perceptible distinct fascial lesion. In these circumstances, it's critical to rule out alternative abdominal pathologies such involvement of an abdominal wall tumor, rectus sheath hematoma, or rectus abdominis diastasis (RAD).[13]

TREATMENT

Incisional hernias are treated surgically by strengthening the weak abdominal wall tissue that permitted the hernia to develop. An incisional hernia is often best treated by surgery, however the precise technique will vary depending on the size and location of the hernia.[14]

Traditionally, an incision is made in the skin above the hernia, the herniated tissue is moved back into the abdominal cavity, and the weak spot in the abdominal wall is reinforced with a mesh patch. To provide long-term support and stop the hernia from returning, the mesh is often constructed of a synthetic material that is intended to meld with the surrounding tissue.[15]

Incisional hernia repair has seen a rise in the usage of minimally invasive procedures in recent years. Laparoscopic surgery entails creating a few tiny abdominal incisions through which the surgeon may introduce specialized instruments and a camera to see the hernia and fix it using a method analogous to

conventional surgery. Compared to open surgery, this procedure may result in less discomfort, a shorter hospital stay, and a speedier recovery.[16]

Another method for treating incisional hernias is robotic surgery. With this method, the repair is carried out using a robotic device that the surgeon controls through a number of tiny abdominal incisions. While it is often more expensive, robotic surgery has several benefits over laparoscopic surgery, such as better visibility and more accurate motions of the surgical tools.[17]

DISCUSSION

A typical side effect of abdominal surgery is an incisional hernia, which develops when weak abdominal muscles enable abdominal contents, including intestines or fatty tissue, to protrude through the surgical incision. If left untreated, this illness may result in pain, discomfort, and even potentially fatal consequences. Individuals who are obese, smoke, or have infections at the surgery site are at risk of developing incisional hernias.[18]

Clinical assessment may typically diagnose an incisional hernia, and CT scans for complicated hernias can confirm the diagnosis. Incisional hernias are often treated surgically, using a mesh to strengthen the thin abdominal wall and stop additional herniation. Patients may suffer risks including infection, bleeding, and recurrence, and the surgical method may change based on the size and severity of the hernia.[12]

Incisional hernia repair generally has a good success rate, and problems may be kept to a minimum via careful planning, preparation, and surgical skill. Incisional hernias have a high chance of forming in some individuals, and CT scans can assist determine hernia morphology and direct the surgical strategy.[18]

CONCLUSION

Incisional hernias are a frequent side effect of abdominal surgery, but with the right preoperative assessment and surgical technique, the risks can be reduced. Patients should be made aware of the risks and potential consequences involved in the surgical treatment of incisional hernias, but with the right care, they may anticipate a successful procedure and relief from their symptoms.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

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Cite this article as: Delgado GEM, Santiago MLA. Review of incisional hernias. Int Surg J 2023;10:810-3.