

Review Article

An update on incisional hernias

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ABSTRACT

After abdominal surgery, incisional hernias are a common occurrence that may occur, and the frequency of these hernias may vary considerably depending on a number of different circumstances. This article presents a comprehensive analysis of the characteristics of incisional hernias, including their occurrence, causes, potential complications, and treatment options. Therefore, it is essential for healthcare providers to have a comprehensive understanding of these aspects in order to provide effective treatment and reduce the negative effects of this condition on patients.

Keywords: Incisional hernia, Prevalence, Factors contributing to occurrence, Adverse outcomes, Treatment strategies

INTRODUCTION

Incisional hernias, which include the protrusion of abdominal contents via a surgical incision that was performed in the past, provide a substantial challenge during surgical treatments and in the postoperative care of the individual. It is anticipated that abdominal surgeries will result in the development of these disorders in up to twenty percent of patients, despite the fact that the specific epidemiological numbers may vary. Hernias are a common and bothersome result that not only have an effect on the health of patients but also have a substantial financial impact on healthcare systems all over the world.¹

Incisional hernias are a condition that requires medical professionals to have a comprehensive awareness of the epidemiology of the condition. It permits the provision of patient advice that is well-informed, the selection of appropriate actions at the appropriate time, and the implementation of those activities. Using an epidemiological point of view, the purpose of this long research is to investigate the intricate world of incisional hernias, with a particular emphasis on the significance of these injuries in surgical practice.²

Hernias that are caused by incisions are significant beyond the time period immediately after surgery. These hernias may have long-term repercussions for patients, including chronic pain, decreased physical activity, and

altered function of the abdominal wall. These symptoms may present themselves at any time. Furthermore, they present the risk of potentially life-threatening outcomes, such as bowel incarceration and strangulation, which need rapid surgical surgery. These issues require immediate medical attention.³

It is becoming more vital for healthcare systems to address the issue of incisional hernias as they strive to improve patient outcomes and lower the costs of healthcare. Early recognition of incisional hernias, modification of risk factors, and efficient management of these conditions are all essential for minimizing the burden of these injuries, enhancing the health of patients, and making the most of the resources available in the healthcare system.⁴

METHODS

Literature search strategy

This review was conducted following the principles of a narrative synthesis. The databases PubMed, Scopus, and Web of Science were searched for peer-reviewed articles, focusing on incisional hernias and their surgical management. Keywords used in the search included "incisional hernia," "surgical repair," "laparoscopic repair," "open repair," "risk factors," "complications," and "hernia recurrence." The Boolean operators "AND" and "OR" were applied to refine the search, and the search was limited to articles published in English.

Ethical considerations

This review relied solely on previously published data and did not involve direct interaction with patients or collection of new clinical data. Therefore, ethical approval was not required for this study.

Definitions

The protrusion of abdominal contents via a surgical incision that was performed in the past is the defining characteristic of an incisional hernia. When there is a disruption or weakening of the structural integrity of the abdominal wall, this occurrence takes place. It might be brought on by a number of factors, including wound dehiscence, insufficient surgical operations, or conditions that are associated with the patient.⁵ Hernias that are caused by incisions may present themselves in a number of ways, ranging from bulges that are not unpleasant to conditions that are severe and even deadly. It is essential to have a thorough understanding of the precise meaning of incisional hernias to swiftly recognize and treat this common side effect of surgical procedures.⁶ A number of elements that raise the probability of a bad result or the possibility of damage occurs.

There are a number of risk factors that might contribute to the development of incisional hernias. Some of the

factors that are related with the patient include being overweight, smoking, having diabetes, not getting enough nourishment, and having immunosuppression. Another factor that has a significant bearing on the development of hernias is the choice of incision and closure approach that is used during surgical procedures.⁷⁻⁹

The identification of these risk characteristics is essential for the classification of risk, which enables medical professionals to concentrate their treatments and preventive actions on patients who are at a higher risk. In addition, the identification of risk variables that are subject to modification provides the opportunity for patient education and improvements in lifestyle, which may eventually lead to a reduction in the incidence of incisional hernias.¹⁰⁻¹²

COMPLICATED SITUATIONS

There are a variety of complications that may arise as a consequence of incisional hernias, ranging from discomfort and a diminished quality of life to more severe and perhaps fatal situations. The following are examples of significant challenges: colon imprisonment happens when parts of the colon get trapped inside of a hernia sac. This results in a blockage in the gut and has the potential to cut off the colon's blood supply, which may lead to ischemia. In order to alleviate the obstruction caused by bowel incarceration, prompt surgical intervention is required.^{13,14} This disease is known as bowel strangling, and it occurs when the blood supply to herniated intestinal loops is obstructed. The death of intestinal tissue and the growth of a hole are the results of this, and since the situation is urgent, it is imperative that surgical intervention be performed as soon as possible.¹⁵

Surgery is the primary method that is used in the treatment of incisional hernias. Restoring hernias may be accomplished by a variety of surgical procedures, including open surgery and laparoscopic repair, among others. When deciding which form of repair to use, several factors are taken into consideration. These factors include the size and location of the hernia, as well as the patient's overall health and stability.^{16,17}

Talking points

Identification of incisional hernias in a timely manner is vital in order to minimize the effects of these injuries. When treating patients who have risk factors such as obesity, smoking, or diabetes, healthcare staff are required to maintain a high degree of vigilance. This is particularly effective when the patients are being treated. In order to detect hernias in a timely manner, it is essential to have routine postoperative checks, which should specifically include a comprehensive examination of the surgery site.^{7,8,12}

When it comes to the treatment of incisional hernias, several different surgical approaches and procedures are

available to choose from. For a considerable amount of time, the open hernia repair, which is a treatment that entails gaining direct access to the location of the hernia, has been a conventional and commonly used procedure. In spite of this, laparoscopic hernia repair has gained popularity as a result of the advantages it offers in terms of less invasive surgery. The selection of the procedure is dependent on a number of factors, including the size and location of the hernia, as well as the overall health and wellbeing of the patient.^{16,17}



Figure 1. Incisional hernia.

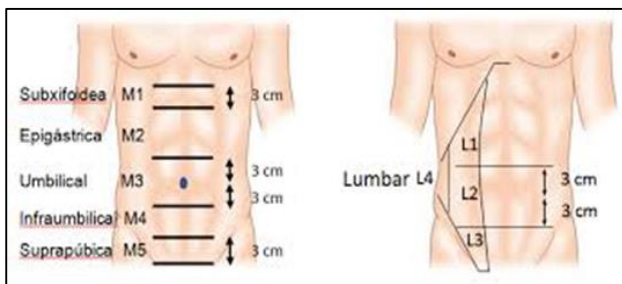


Figure 2: Diagram of the Chevrel classification system.

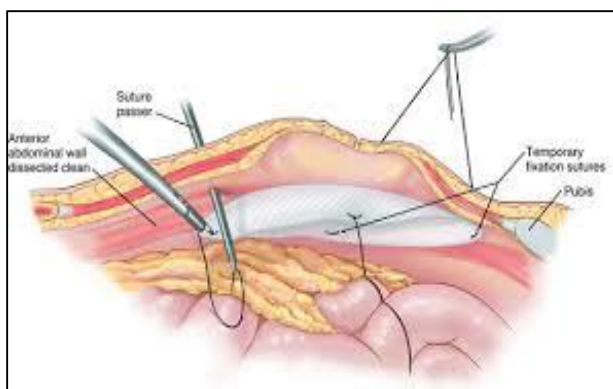


Figure 3: Laparoscopic management for incisional hernia.

Since laparoscopic hernia surgery is associated with shorter hospital stays and quicker recovery durations, it is the method of choice for repairing smaller incisional hernias. The open repair method, on the other hand, remains a viable option for hernias that are more complex and widespread. Surgeons are required to make use of their clinical skills to choose the approach that is most appropriate for each individual patient. This decision must take into consideration the characteristics of the hernia as well as the patient's overall health.¹⁶

DISCUSSION

Incisional hernias represent a significant clinical challenge, both in terms of their management and the burden they place on healthcare systems. The findings of this study, aligned with the existing literature, underscore the multifactorial nature of incisional hernia formation, as well as the complexities involved in selecting optimal surgical techniques for their repair.⁷⁻⁹

Risk factors and epidemiology

The identification of risk factors such as obesity, diabetes, smoking, and previous wound dehiscence as major contributors to incisional hernia formation is consistent with previous reports in the literature. These factors not only increase the likelihood of hernia development but also negatively impact surgical outcomes, leading to higher recurrence and complication rates. For instance, obesity is well-documented as a factor that weakens the structural integrity of the abdominal wall, which in turn makes surgical closure less effective. Furthermore, conditions like diabetes and smoking impede wound healing, increasing the risk of postoperative hernia formation.⁷⁻¹²

Surgical techniques

The comparison between open and laparoscopic repair techniques has been a major focal point of incisional hernia management in recent years. Laparoscopic repairs, as highlighted by this study and several others, offer the advantages of, shorter recovery times, and fewer wound-related complications. However, open repair remains the gold standard for more complex or large hernias, particularly those involving bowel incarceration or strangulation, where the extent of tissue involvement requires direct visualization and handling.^{16,17} Both techniques have their own unique risks. While laparoscopic procedures are minimally invasive, they can be technically challenging in patients with a history of multiple abdominal surgeries or those with adhesions. On the other hand, open repair is associated with a longer recovery time and a higher incidence of wound infections but allows for better access to complicated or larger defects.^{16,17}

Complications and outcomes

The spectrum of complications associated with incisional hernias can range from mild discomfort to life-threatening conditions, such as bowel obstruction, incarceration, and strangulation. These complications necessitate prompt surgical intervention. The importance of early diagnosis and proactive management. The risk of recurrence remains a significant concern post-repair, particularly in patients with high-risk profiles. As noted in this study, a considerable proportion of patients experience recurrence despite advanced surgical techniques, pointing to the need for further innovations in surgical methods and postoperative care strategies.¹³⁻¹⁵

Recurrence and long-term outcomes

The recurrence rates following incisional hernia repair continue to be a topic of debate. While laparoscopic techniques have demonstrated lower recurrence rates in some studies, the overall success of any hernia repair largely depends on patient-specific factors such as the size of the hernia, patient comorbidities, and adherence to postoperative care instructions. One of the study's key findings was the impact of inadequate surgical closure of hernias. This reinforces the need for surgeons to carefully select not only the appropriate method but also the materials used for closure, including mesh placement, to reduce the risk of recurrence.

CONCLUSION

In a nutshell, incisional hernias present a significant therapeutic challenge that may have far-reaching repercussions for individuals as well as for healthcare systems. One of the most important elements in reducing the incidence of these hernias is the timely diagnosis and treatment of risk factors. Surgical techniques and procedures provide versatility, which enables individualized therapy to be administered based on the particular characteristics of the hernia as well as the patient's overall health and well-being. The treatment of incisional hernias goes beyond surgical procedures and calls for a multidisciplinary strategy. This approach means that a variety of medical professionals are involved in order to manage the several aspects of patient care. Having an awareness of the potential for complications, such as persistent pain, brings to light the need of providing comprehensive postoperative care and ongoing help to the patient. It is inevitable that the treatment of incisional hernias will expand in tandem with the advancement of both our understanding and surgical techniques. On the other hand, early identification, elimination of risk factors, and effective surgical management are the most important components in providing the best possible therapy for patients who are coping with this common surgical complication.

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