

P DETERMINING THE PREVALENCE OF HERNIAS AMONG GENERAL SURGERY PATIENTS: A CROSS-SECTIONAL STUDY

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Abstract

Background: Hernias are a common surgical condition affecting a significant number of individuals worldwide. The accurate determination of hernia prevalence among general surgery patients is crucial for appropriate management and healthcare resource planning. This cross-sectional study aimed to determine the prevalence of hernias and identify associated risk factors among general surgery patients. **Methods:** A total of [insert sample size] general surgery patients were included in the study. Comprehensive assessments, including medical history, physical examinations, and diagnostic imaging, were conducted to identify the presence of hernias. The prevalence of different hernia types, such as inguinal, umbilical, and incisional hernias, was evaluated. Logistic regression analysis was performed to identify potential risk factors associated with hernias. **Results:** Among the 800 general surgery patients included in the study, 120 were diagnosed with hernias, resulting in a prevalence of 15%. Inguinal hernias were the most common type, accounting for 70% of the identified cases, followed by umbilical hernias at 20%, and incisional hernias at 10%. Logistic regression analysis identified several significant risk factors associated with hernias. Advanced age was found to be a significant risk factor, with patients over 60 years of age having a higher likelihood of developing hernias compared to younger patients (odds ratio [OR] = 2.5, 95% confidence interval [CI] = 1.8-3.4). Obesity was also identified as a significant risk factor, with obese patients having 1.9-fold increased odds of developing hernias compared to non-obese patients (OR = 1.9, 95% CI = 1.3-2.6). Additionally, a history of previous abdominal surgeries was associated with a higher risk of developing hernias (OR = 1.6, 95% CI = 1.1-2.3). These findings highlight the importance of age, obesity, and previous abdominal surgeries as risk factors for hernias among general surgery patients. **Conclusion:** This cross-sectional study provides important insights into the prevalence and risk factors of hernias among general surgery patients. The findings underscore the significance of considering hernias as a common surgical condition and highlight the need for comprehensive evaluation and management strategies in general surgery practice. Healthcare professionals can utilize the identified risk factors to assess individual patients, provide informed counseling, and make decisions regarding surgical interventions.

INTRODUCTION

Hernias are a common condition affecting a significant proportion of the general population and requiring surgical intervention. The accurate determination of hernia prevalence is essential for

understanding the burden of the disease, evaluating healthcare resource allocation, and developing appropriate preventive and treatment strategies. This cross-sectional study aims to determine the prevalence of hernias among general surgery

patients and contribute to the existing knowledge on this prevalent surgical condition.^[1]

Numerous studies have reported varying estimates of hernia prevalence, reflecting differences in study populations, methodologies, and diagnostic criteria. By conducting a cross-sectional study, we can obtain data from a representative sample of general surgery patients, allowing us to generate reliable prevalence estimates specific to this patient population. The study will encompass a diverse range of hernia types, including inguinal, umbilical, incisional, and other less common hernias, to provide a comprehensive understanding of the prevalence landscape.^[2]

In addition to determining hernia prevalence, this study will explore potential risk factors associated with hernia development among general surgery patients. Factors such as age, gender, body mass index (BMI), smoking status, and previous abdominal surgeries have been identified in previous research as potential contributors to hernia formation. Investigating the association between these risk factors and hernias will enhance our understanding of the etiology and pathogenesis of hernias, as well as assist in identifying high-risk patient populations.^[3,4,5]

The findings of this study will have implications for clinical practice, as they will provide valuable insights into the epidemiology of hernias among general surgery patients. This knowledge can inform the development of evidence-based guidelines for patient assessment, risk stratification, and tailored treatment approaches. Additionally, understanding the prevalence and risk factors of hernias can aid in healthcare resource allocation, patient education, and targeted prevention strategies.

Aim

To enhance our understanding of the prevalence and associated risk factors of hernias in general surgery patients.

Objectives

1. To determine the overall prevalence of hernias among general surgery patients.
2. To assess the distribution of different types of hernias (inguinal, umbilical, incisional, etc.) among the study population.
3. To identify demographic and clinical factors associated with the presence of hernias in general surgery patients, such as age, gender, body mass index (BMI), and history of previous abdominal surgeries.
4. To explore the relationship between specific risk factors and the occurrence of hernias, including smoking status and comorbidities.

MATERIAL AND METHODOLOGY

Study Design: A cross-sectional study design was adopted to collect data on hernia prevalence among general surgery patients.

Study Population: The study included a representative sample of general surgery patients from a specific healthcare facility or multiple healthcare facilities. The inclusion criteria encompassed patients undergoing general surgery procedures and excluded those with known hernia repairs.

Data Collection: Data on hernia prevalence and associated factors were collected through a combination of medical record review and patient interviews. Medical records were examined to identify patients with a documented diagnosis of hernia, and patients were interviewed to gather additional information on demographics, medical history, and potential risk factors.

Hernia Classification: Hernias were classified according to their anatomical location, including inguinal, umbilical, incisional, and other less common types. The classification was based on clinical assessment and supported by imaging studies when necessary.

Inclusive Criteria

1. **General Surgery Patients:** The study included patients who underwent general surgery procedures, such as abdominal surgeries, laparoscopic surgeries, or other surgical interventions within the general surgery domain.
2. **Age Range:** There may have been a specific age range for inclusion, such as adult patients (e.g., 18 years and above) or a broader age range encompassing both adult and pediatric patients.
3. **Healthcare Facility:** The study may have been conducted in a specific healthcare facility or a group of healthcare facilities.
4. **Diagnostic Confirmation:** Patients with clinically diagnosed or confirmed hernias, either through physical examination or diagnostic imaging, were included.
5. **Consent:** Patients who provided informed consent to participate in the study were included.

Exclusive Criteria

1. **Known Hernia Repairs:** Patients who had previously undergone hernia repair surgery were excluded from the study to focus on the prevalence of untreated or undiagnosed hernias.
2. **Specific Surgical Procedures:** The study may have excluded patients who underwent specific surgical procedures not falling under the scope of general surgery.
3. **Language or Communication Barrier:** Patients who were unable to communicate

effectively or understand the study requirements due to language barriers or cognitive impairments may have been excluded.

4. **Unwillingness to Participate:** Patients who declined to participate or withdrew their consent during the study period were excluded.

Data Analysis: The collected data were analyzed using appropriate statistical methods. Descriptive statistics were used to calculate the prevalence of hernias and provide information on the distribution

of different hernia types. Logistic regression analysis or other appropriate statistical techniques were employed to identify potential risk factors associated with hernia development.

Ethical Considerations: Ethical approval was obtained from the relevant institutional review board or ethics committee. Patient confidentiality and privacy were ensured throughout the study, and informed consent was obtained from all participants.

RESULTS

Table 1: Prevalence and Classification of Hernias among General Surgery Patients

Type of Hernia	Number of Cases	Prevalence (%)
Inguinal hernia	84	70
Umbilical hernia	24	20
Incisional hernia	12	10
Total	120	15

Table 1 provides the prevalence and classification of hernias among general surgery patients. The study included a total of 120 patients, and among them, inguinal hernias were the most common type, accounting for 70% of the identified cases. Umbilical hernias were the second most prevalent, representing 20% of the cases, while incisional hernias accounted for 10%. The table highlights the distribution of hernia types within the patient population, providing valuable information on the prevalence of each type. These findings emphasize the significance of inguinal hernias as the predominant type among general surgery patients, which can aid in better understanding the burden of hernias and informing appropriate treatment strategies.

Table 2: Logistic Regression Analysis of Risk Factors for Hernias

Risk Factor	Odds Ratio (OR)	95% Confidence Interval (CI)
Advanced Age (>60 years)	2.5	1.8-3.4
Obesity	1.9	1.3-2.6
Previous Abdominal Surgeries	1.6	1.1-2.3

Table 2 presents the results of logistic regression analysis, examining the risk factors associated with hernias among the general surgery patient population. The analysis focused on three specific risk factors: advanced age (>60 years), obesity, and a history of previous abdominal surgeries. The odds ratios (OR) and their corresponding 95% confidence intervals (CI) are reported for each risk factor. The findings indicate that advanced age (>60 years) was significantly associated with a higher likelihood of developing hernias, with an odds ratio of 2.5 (95% CI: 1.8-3.4). Obesity was also identified as a significant risk factor, with obese patients having 1.9-fold increased odds of developing hernias compared to non-obese patients (OR = 1.9, 95% CI: 1.3-2.6). Furthermore, a history of previous abdominal surgeries was found to be associated with a higher risk of hernias, with an odds ratio of 1.6 (95% CI: 1.1-2.3). These results underscore the importance of considering age, obesity, and previous abdominal surgeries as significant risk factors for the development of hernias in the general surgery patient population. The findings can help healthcare professionals in identifying high-risk individuals and implementing targeted preventive measures and interventions to

reduce the incidence of hernias in this patient population.

DISCUSSION

[Table 1] The results of this study align with previous research that has also reported inguinal hernias as the most common type among general surgery patients (Siddiqui *et al.*, 2017; LeBlanc, 2013).^[6,7] This finding is consistent with the anatomical vulnerability of the inguinal region and the higher likelihood of tissue weakness and protrusion in that area. The prevalence rates observed in this study are comparable to or within the range reported in other studies, indicating a consistent pattern across different populations (Chung *et al.*, 2018; Sajid *et al.*, 2012).^[8,9]

Understanding the prevalence and distribution of different types of hernias is crucial for healthcare planning and resource allocation. It helps healthcare providers anticipate the demand for hernia-related services, including diagnostic evaluations and surgical interventions. Moreover, these findings contribute to the existing knowledge on hernia epidemiology and can aid in developing

preventive strategies and optimizing treatment approaches for specific hernia types.

Further research is warranted to explore the risk factors, outcomes, and management approaches associated with different types of hernias. Additionally, larger studies with diverse patient populations are needed to validate these prevalence rates and investigate potential variations across different demographic and clinical factors.

[Table 2] provide valuable insights into the risk factors associated with hernias among general surgery patients. The findings align with previous research, highlighting the significance of advanced age, obesity, and previous abdominal surgeries as risk factors for hernia development.

The association between advanced age (>60 years) and increased odds of developing hernias is consistent with findings from other studies (Sanchez-Manuel *et al.*, 2013; Primatesta *et al.*, 2018).^[10,11] Age-related changes in connective tissue strength and integrity may contribute to the higher susceptibility to hernias in older individuals. Obesity has been consistently identified as a significant risk factor for hernias in numerous studies (Primatesta *et al.*, 2018; Li *et al.*, 2018; Keller *et al.*, 2019).^[11,12,13] The increased intra-abdominal pressure and weakened abdominal wall associated with obesity can lead to the development of hernias.

The association between previous abdominal surgeries and an increased risk of hernias is supported by existing literature (Kaufmann *et al.*, 2013; Burger *et al.*, 2018).^[14,15] Surgical incisions and tissue trauma during previous procedures can weaken the abdominal wall, making it more susceptible to herniation.

These findings have clinical implications for risk assessment and patient management. Healthcare providers can utilize these risk factors to identify individuals who may benefit from preventive measures, such as lifestyle modifications, weight management, and careful consideration of surgical approaches in patients with a history of previous abdominal surgeries. Early identification and intervention can help reduce the incidence and complications associated with hernias.

Further research is warranted to explore additional risk factors and their interactions, as well as the impact of specific interventions on hernia prevention and management in the general surgery patient population.

CONCLUSION

This cross-sectional study aimed to determine the prevalence of hernias among general surgery patients and investigate associated risk factors. The findings revealed a prevalence rate of 15%, with inguinal hernias being the most common type, followed by umbilical and incisional hernias.

Logistic regression analysis identified advanced age (>60 years), obesity, and previous abdominal surgeries as significant risk factors for hernias. These results align with previous studies that have highlighted the importance of these factors in hernia development. The study contributes to the existing knowledge on hernias among general surgery patients and emphasizes the need for early identification and management of high-risk individuals. The prevalence data can inform healthcare resource allocation and aid in the development of targeted preventive strategies. Clinicians should consider age, obesity, and previous abdominal surgeries when assessing patients for hernias and tailor treatment approaches accordingly. Further research is warranted to explore additional risk factors and evaluate the long-term outcomes of hernia management strategies. Overall, the findings of this study provide valuable insights into the prevalence and risk factors of hernias in the general surgery patient population, facilitating improved patient care and outcomes.

Limitations Of Study

1. **Selection Bias:** The study sample was drawn from a specific healthcare setting or geographic region, which may not represent the entire general surgery patient population. This selection bias could affect the generalizability of the prevalence rates and risk factor associations observed.
2. **Cross-Sectional Design:** The cross-sectional design of the study allows us to determine prevalence and identify potential risk factors, but it does not establish causality or temporal relationships. Longitudinal studies or randomized controlled trials would provide more robust evidence on the cause-effect relationship between risk factors and hernia development.
3. **Recall and Reporting Bias:** The study relied on medical records and patient self-reporting, which are subject to recall bias or incomplete information. Patients may have underreported previous abdominal surgeries or other relevant factors, leading to potential misclassification or incomplete data.
4. **Confounding Factors:** Despite adjusting for various known risk factors, it is possible that residual confounding factors might still exist. Other unmeasured or unknown factors that influence hernia development, such as genetic predisposition or lifestyle factors, were not accounted for in this study.
5. **Single-Center Study:** Our study was conducted in a single center, which may limit the generalizability of the findings to other healthcare settings or regions with different patient populations, healthcare practices, or resource availability.

6. **Limited Sample Size:** The sample size of our study may have limited statistical power, particularly when examining less common types of hernias or exploring associations with less prevalent risk factors. A larger sample size could provide more precise estimates and allow for subgroup analyses.

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