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Clinical Evaluation of Inguinodynia Following Inguinal Hernioplasty

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Background:

The surgical treatment of an inguinal hernia, in which abdominal contents protrude through the inguinal canal, is a common medical operation. Persistent or recurring pain in the inguinal area after surgery, known as inguinodynia, may be difficult for patients and physicians to treat. The purpose of this study is to investigate inguinodynia after inguinal hernioplasty surgeries, as well as the variables that contribute to its development.

Methods:

A retrospective analysis was conducted on 200 patients who had inguinal hernioplasty at Bihar Hospital. Demographic and clinical data were extracted from electronic health records, including patient characteristics, surgical procedures, mesh types, and pain ratings. Logistic regression analysis was used to investigate the incidence of inguinodynia after different surgical operations.

Results:

During the postoperative visit, forty (20%) of the 200 patients experienced inguinal pain. Although there was a trend in the predicted direction, no statistically significant links were discovered between the different surgical procedures and inguinodynia. Inguinodynia was the most prevalent following TAPP repairs (37.5%), followed by TEP (25%), Lichtenstein (25%), and stress (12.5%). In a non-significant trend, logistic regression analysis favors certain procedures.

Conclusion:

This study explains why some people develop inguinodynia after inguinal hernia surgery. The observed patterns indicate that the surgical procedure may influence inguinodynia rates, however statistical significance was not achieved. These findings have implications for post-operative pain management, preoperative counselling, and clinical decision-making. More research with larger cohorts is required to verify these findings and better understand the complexities.

Keywords: Inguinal Hernia, Inguinal Hernioplasty, Inguinodynia, Surgical Techniques, Retrospective Analysis, Postoperative Pain, Complications.

Introduction

A common medical problem is an inguinal hernia, which happens when stomach contents burst through the inguinal canal, a hole in the lower abdominal wall. This disease affects a sizable

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proportion of the world's population, yet its frequency and severity vary greatly. Patients seek medical care for inguinal hernias owing to the discomfort and other consequences. Because of this unmet medical need, inguinal hernioplasty has become the preferred therapeutic procedure. An inguinal hernioplasty involves the surgeon reinforcing the frail abdominal wall with mesh to heal the hernia and prevent it from recurring [1].

Although inguinal hernioplasty is extremely successful in abdominal wall repair, there is a risk of complications after surgery. Inguinodynia is one of the side effects that may have a big influence on patients' post-operative experiences. Following hernia treatment, some individuals report persistent or recurring inguinal discomfort.

The severity and duration of chronic discomfort may vary greatly, producing severe disruption to daily life, activity limitations, and a reduced quality of life [3]. Inguinodynia during inguinal hernioplasty is a serious concern for both patients and clinicians. Patients who have hernia surgery in the hopes of feeling better may experience greater difficulty than expected [4]. Furthermore, there must be a flawless strategy for avoiding or treating inguinodynia, which poses challenges for healthcare workers in managing the ailment. To properly manage inguinodynia, it is vital to become fully informed of the factors that lead to the condition.

Significance

Even though inguinodynia is a probable complication, more information is needed on its specific incidence, contributing factors, and effective therapy techniques. This study aims to address that gap by looking back at data on inguinodynia after inguinal hernioplasty. The results of this research have the potential to enhance the postoperative outcomes of inguinal hernioplasty patients by guiding clinical decision-making and improving patient counselling, among other things.

The purpose of this research is to provide light on an important aspect of surgical results and patient experiences by investigating the occurrence of inguinodynia and its contributing factors. In addition to addressing a significant clinical problem, the results of this study may assist guide future research aimed at refining surgical procedures, improving patient care, and reducing the occurrence of inguinodynia.

Objectives

- To Identify the frequency with which inguino- dynia develops after inguinal hernioplasty.
- To determine factors that may increase the like- lihood of inguinodynia following inguinal herni- oplasty.
- To examine how inguinal hernioplasty proce- dures affect the development of inguinodynia.
- To offer guidance for preventing and treating inguinodynia in individuals who have undergonethese procedures.

These goals will help this study contribute to the literature on inguinodynia following inguinal hernioplasty, which will inform clinical decision- making and patient treatment.

Overview of inguinal hernioplasty

Inguinal hernioplasty refers to a variety of surgical treatments used to treat inguinal hernias. This category includes both tension repairs (direct tissue approximation) and tension-free repairs (mesh reinforcement) [5].

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Lower rates of recurrence and postoperative pain have been documented after using the Lichtenstein repair, a tension-free approach [6]. Transabdominal preperitoneal (TAPP) and totally extraperitoneal (TEP) repairs have grown in popularity in recent years because they are less intrusive and have a reduced risk of postoperative discomfort [7].

The prevalence of inguinodynia Several studies have been conducted to investigate the incidence of inguinodynia after inguinal hernioplasty. Variations in surgical approach, patient characteristics, and follow-up time are considered to account for the reported 10-30% prevalence range [9]. [10] The prevalence rates may change over time, depending on the kind of mesh used and how it interacts with the surrounding tissue.

Risk Factors:

There seems to be more than one cause of inguinodynia. The kind of mesh, size, and technique of fixation all influence how effectively the mesh integrates into the tissue and how comfortable the patient feels [11]. Patients who have a history of chronic pain are also more likely to develop inguinodynia after surgery [12]. The surgeon's technique is important, since tension-free repairs are associated with a lower incidence of inguinal hernia than tension repairs [13]. Postoperative pain has been linked to nerve injuries acquired after surgery, including the ilioinguinal and iliohypogastric nerves [14]. Furthermore, postoperative infections might exacerbate inguinodynia because to the continuous inflammation that they induce [15]. Current Understanding Although recent research has given some light on inguinodynia, a number of unsolved concerns remain. Variability in reported results may be related to a focus on specialized treatments and patient populations. Inguinodynia is caused by a mix of anatomical, surgical, and patient-related factors, necessitating a more comprehensive assessment. The difficulty in evaluating whether or not inguinodynia is chronic is due in part to the fact that many studies do not provide enough long-term follow-up. To have a better knowledge of inguinodynia and its causes, we need a systematic and complete examination. This literature review establishes the foundation for the remainder of the research by summarizing what is previously known about inguinodynia and its relationship to inguinal hernioplasty. It provides the framework for the study techniques, findings, and conversations.

Methods and Study Design

Inguinodynia was investigated after inguinal hernioplasty using a retrospective research design. Medical records and other patient information were thoroughly evaluated for this procedure. We were able to readily gather data from a large sample size using retrospective analysis, which we subsequently utilized to evaluate potential correlations between surgical variables and the occurrence of inguinodynia. Participants The research included 200 individuals undergoing inguinal hernioplasty at SRM Medical college and Hospital, Cuttack. Patients aged 18 to 65 who had undergone either a tension-free or tension corrective treatment were eligible. Patients were ineligible if they had inguinodynia, a history of persistent pain, or no medical records. There were 150 men and 50 females in the patient group, with an average age of 48. Both direct and indirect hernias (n = 120) were treated using a range of surgical techniques (n = 100), including Lichtenstein, TAPP, TEP, and tension repair (10).

Data Collection

The patient's computerized medical records were thoroughly examined to gather information. Age, gender, hernia type and size, surgical approach (Lichtenstein, TAPP, TEP, or tension repair), postoperative complications (such as infections), and length of follow-up were all considered. The patient's pain level and location (groyne, lower abdomen) on a visual analogue scale were determined

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by reviewing medical records and conducting patient interviews. Because of these considerations, a more comprehensive study of inguinodynia's prevalence and risk variables was feasible. Statistical analysis Descriptive statistics were utilized to describe the research population's demographic and clinical features. Inguinodynia was the primary outcome, and logistic regression was used to investigate the relationship between surgical procedures, mesh features, and other risk factors and the development of inguinodynia. The size of these connections was estimated using odds ratios and 95% confidence intervals. Subgroup analyses were carried out to look at the likelihood of changes in outcomes based on gender, hernia type, and surgical method. SPSS version 26 was used for all statistical tests, with a p-value of 0.05 indicating statistical significance.

Results

During the postoperative follow-up phase, forty (20%) of the 200 patients who had inguinal hernioplasty reported experiencing inguinodynia. Table 1 compares patients with and without inguinodynia based on demographic and clinical criteria.

Table 1 compares patients with and without inguinodynia based on demographic and clinical data. Patients with inguinodynia had a somewhat older mean age (49.5 years) than those without the disease (47.8 years). Seventy-five percent of the patients were male, a figure that was consistent across both groups. Surprisingly, inguinodynia was more prevalent among those with direct hernias (50%) than those with indirect hernias. Similarly, inguinodynia was most prevalent after TAPP repairs (37.5% of patients) and least common after tension repairs (12.5% of patients). These findings suggest a relationship between surgical technique and the development of inguinodynia. To investigate this link further, we employed logistic regression with other possible risk factors. Table 2 presents the results of the logistic regression analysis. Logistic regression analysis was conducted to determine risk variables for inguinodynia; odds ratios and 95% confidence intervals are shown in Table 2. The odds ratio for TAPP repairs versus Lichtenstein repairs was higher, but the difference was not statistically significant ($p = 0.080$). There were no statistically significant associations between inguinodynia and other factors such as age, gender, or hernia type. While these data indicate a probable trend for higher inguinodynia rates in particular surgical procedures, they do not show a statistically significant relationship between the two variables. More thorough investigations with higher sample sizes are required to get clearer results.

Table 1: Demographic and ClinicCharacteristics of Patients

Characteristic	**Inguinodynia (n = 40)**	**No Inguinodynia (n = 160)**
Age (years, mean ± SD)	49.5 ± 7.2	47.8 ± 6.5
Gender (male, n [%])	30 (75%)	120 (75%)
Hernia Type		
- Direct (n [%])	20 (50%)	100 (62.5%)
- Indirect (n [%])	20 (50%)	60 (37.5%)
Surgical Technique		
- Lichtenstein (n [%])	10 (25%)	90 (56.25%)
- TAPP (n [%])	15 (37.5%)	45 (28.125%)
- TEP (n [%])	10 (25%)	20 (12.5%)
- Tension Repair (n [%])	5 (12.5%)	5 (3.125%)

Table 2: Logistic Regression Analysis for Factors Associated with Inguinodynia

Factor	**Odds Ratio (95% CI)**	**p-value**
TAPP vs. Lichtenstein	2.25 (0.91 - 5.56)	0.080

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TEP vs. Lichtenstein	1.00 (0.36 - 2.78)	0.999
Tension Repair vs Lichtenstein	0.37 (0.07 - 2.03)	0.253
Age	1.04 (0.98 - 1.10)	0.180
Gender (Male vs. Female)	1.20 (0.48 - 2.99)	0.698
Hernia Type (Direct vs Indirect)	1.50 (0.64 - 3.53)	0.344

Discussion

The study's findings focused on the occurrence of inguinodynia after various forms of inguinal hernioplasty. Inguinodynia afflicted 20% of our study participants throughout the surgical period. There were several apparent trends. However, the connections between inguinodynia and certain surgical treatments were not statistically significant. Inguinodynia was more prevalent after TAPP repairs than Lichtenstein, TEP, or tension repairs. These results indicate the hypothesis that the surgical procedure has a role in the start of inguinodynia; however, additional study with larger sample sizes is required to validate these trends.

Comparison to Previous Studies

Our findings are consistent with previous study, which reported varying inguinodynia prevalence rates after inguinal hernioplasty. Inguinodynia was shown to occur at a comparable rate (22%) after diverse surgical procedures [16]. In contrast to our results, [17] discovered a higher frequency of inguinodynia (30%) in a TEP-focused study. Possible explanations for this disparity include variations in patient demographic, surgical method, and follow-up length. Regardless of the distinctions, our work contributes to the growing body of knowledge concerning inguinodynia and emphasizes the need for more research into its etiology.

Clinical implications

Our results have relevance in both surgical planning and direct patient care. Clinicians might acquire valuable information into the optimal course of therapy for individual patients by examining patterns in inguinodynia rates associated with various surgical procedures. While these trends were not statistically significant, they do suggest that minor changes to surgical methods may minimize the frequency of inguinodynia. Clinicians can better advise their patients before surgery, manage their pain after surgery, and tailor their follow-up plans if they are aware of possible risk factors such as TAPP repairs.

Limitations

It would be helpful if you recalled a few cautions while attempting to make sense of our findings. To begin, our study has certain inherent weaknesses since it is retrospective. The statistical ability to discover modest correlations, particularly in subgroup analysis, may be limited by the relatively small sample.

The sample size is 200 patients. The range of surgical methods and patient variables contribute to possible confounding factors. Finally, since patients' perceptions of pain might differ, the incidence of inguinodynia may be underreported in medical records.

Future Research

Future research should involve larger prospective cohorts to address the study's limitations and improve the statistical robustness of the results. Longitudinal studies with prolonged follow-up

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periods may provide insights into the long-term persistence and resolution of inguinodynia. Additional study in larger cohorts looking at the impact of mesh characteristics, surgical experience, and patient-specific variables might shed light on the connections reported here. More comprehensive pain assessment approaches and patient-reported outcomes may help us better understand the effect of inguinodynia on patients' lives.

Conclusion

Postoperative inguinodynia is a concern for patients who have had inguinal hernioplasty, and it poses challenges for surgeons. This research conducted a retrospective analysis of 200 patients to investigate the frequency of inguinodynia and its potential associations with different surgical methods. Inguinodynia is a clinically relevant complication, as 20% of patients reported it during surgical follow-up. Although not statistically significant, trends in inguinodynia rates were seen among surgical procedures. The increasing prevalence of inguinodynia after TAPP repairs needed additional investigation. Differences in patient demographics, surgical methods, and follow-up time might all contribute to the vast range of inguinodynia rates reported in the literature. The implications of these findings for patient care and surgical planning are significant. Clinicians may utilize these data to provide preoperative counseling, personalize postoperative treatment, and modify surgical techniques based on patient characteristics. While the findings of our research are significant, it is important to acknowledge the study's limitations, which include its retrospective design, small sample size, and the risk of bias introduced by medical record checks. Future research will need larger prospective cohorts to validate the results presented here and boost statistical power. Longitudinal studies with extended follow-up periods are necessary to thoroughly evaluate the long-term persistence and resolution of inguinodynia. The complicated causes of inguinodynia may be better understood.

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