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Prevelance of Inguinodynia in Patients Undergoing Hernioplasty in A Tertiary Care Hospital

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Abstract

Inguinal hernia repair is one of the most commonly performed surgical procedures globally, with over 20 million operations carried out annually. Inguinal hernias, characterized by the protrusion of abdominal contents through a weakened area of the lower abdominal wall, affect approximately 27% of men and 3% of women during their lifetime. The primary objective of this study is to estimate the prevalence of inguinodynia in patients undergoing hernioplasty. Inguinodynia, defined as chronic groin pain persisting beyond the normal healing period following hernia repair, remains a significant postoperative complication. This study was designed as a cross-sectional observational study. The research was conducted in the Department of General Surgery at PES Institute of Medical Sciences and Research (PESIMSR), Kuppam, Andhra Pradesh. The study population included all patients who underwent hernioplasty using mesh (either open Lichtenstein or laparoscopic repair) in the institution and subsequently presented with groin pain persisting beyond three months postoperatively. A minimum sample size of 75 was estimated based on prevalence rates reported in the study by Bruno Garcia Dias, using standard sample size calculation formulas. Out of 75 patients, the majority were in the 31–40 years age group (40%), followed by 41–50 years (17.33%) and 21–30 years (16%). Only a small proportion of patients were aged above 60 years, suggesting that inguinal hernia predominantly affects the middle-aged populationThe vast majority of cases were primary hernias (90.67%), with recurrent hernias noted in only 9.33% of the cohort. This reflects the predominance of first-time hernia presentations in routine clinical practice.Open hernioplasty was the most commonly employed technique (42.67%), followed by Transabdominal Preperitoneal Repair (TAPP) in 33.33% and Totally Extraperitoneal Repair (TEP) in 24% of patients. This demonstrates a balanced use of both open and laparoscopic approaches in hernia repair. This study shows that Inguinodynia developed in 12% of patients, and 5.33% experienced neuropathic pain. Although most factors didn't show statistical significance, recurrent hernias clearly led to more neuropathic pain. Laparoscopic repairs resulted in fewer pain complaints than open procedures

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INTRODUCTION

Inguinal hernia repair is one of the most commonly performed surgical procedures globally, with over 20 million operations carried out annually[1]. Inguinal hernias, characterized by the protrusion of abdominal contents through a weakened area of the lower abdominal wall, affect approximately 27% of men and 3% of women during their lifetime[2]. Surgical repair remains the only definitive treatment for this condition, with techniques evolving over decades from traditional tissue repairs to modern mesh-based approaches such as the Lichtenstein tension-free repair and minimally invasive laparoscopic procedures like total extraperitoneal (TEP) and transabdominal preperitoneal (TAPP) repairs[3].

While advancements in surgical techniques have significantly reduced recurrence rates, a growing concern has emerged in the form of chronic postoperative inguinal pain, also termed inguinodynia or chronic postherniorrhaphy inguinal pain (CPIP). This condition is defined as groin pain persisting for more than three months following hernia repair, in the absence of other identifiable causes such as infection or recurrence[1,4]. The reported prevalence of CPIP varies widely across studies, ranging from 10% to 54%, depending on the definition used, surgical technique, and follow-up duration[5,6].

The etiology of inguinodynia is multifactorial, involving both neuropathic and nociceptive mechanisms[7]. Neuropathic pain may arise from direct or indirect injury to one or more of the inguinal nerves-most commonly the ilioinguinal, iliohypogastric, and genitofemoral nerves-due to transection, entrapment, or mesh-induced fibrosis[4]. On the other hand, nociceptive pain is often a result of mesh-related inflammatory responses, fibrosis, or tension in adjacent tissues[7]. The overlap of these pain pathways complicates diagnosis and management, as many patients present with mixed pain profiles[5].

Importantly, inguinodynia is not only a medical concern but also a significant public health issue, as it can severely impair quality of life, daily function, and productivity[4,5]. Symptoms may range from mild discomfort to debilitating pain associated with allodynia, dysesthesia, or even sexual dysfunction such as dysejaculation or orchialgia[4,7]. These outcomes have prompted increasing interest in evaluating risk factors and preventive strategies. Variables such as age, gender, BMI, comorbidities, nerve handling during surgery, type of mesh used, and fixation techniques have all been explored as potential contributors[8,9].

Despite the rising attention to inguinodynia in surgical literature, its true prevalence remains underreported and possibly underestimated, especially in developing countries where long-term follow-up data may be lacking[7,9]. Furthermore, there is ongoing debate regarding optimal strategies for prevention, including the efficacy of prophylactic neurectomy versus nerve preservation. Some studies suggest that prophylactic excision of the ilioinguinal nerve may reduce chronic pain, while others indicate no significant difference.

Given this context, it becomes imperative to investigate the prevalence and clinical profile of inguinodynia in patients undergoing hernioplasty, particularly in settings where standardization of technique and postoperative follow-up is variable. Understanding the burden of this complication can inform surgical decision-making, guide patient counseling, and shape future research in optimizing hernia care.

The primary objective of this study is to estimate the prevalence of inguinodynia in patients undergoing hernioplasty. Inguinodynia, defined as chronic groin pain persisting beyond the normal healing period following hernia repair, remains a significant postoperative complication. Furthermore, the study aims to compare the prevalence of inguinodynia between two commonly employed surgical techniques-open hernioplasty and laparoscopic hernioplasty. This comparison will help identify if the surgical approach has a significant impact on the incidence of chronic postoperative groin pain, thereby contributing to improved surgical decision-making and patient outcomes.

Aims and Objectives:

- To estimate the prevalence of Inguinodynia in patients undergoing hernioplasty
- To compare the prevalence of Inguinodynia among open hernioplasty and laparoscopic hernioplasty

MATERIALS AND METHODS

The design of this study was cross-sectional observational. The study was carried out at the PES Institute of Medical Sciences and Research (PESIMSR), Kuppam, Andhra Pradesh, in the Department of General Surgery. All patients who had mesh hernioplasty (either open Lichtenstein or laparoscopic repair) performed at the facility and who later complained of groin pain that persisted for more than three months after the procedure were included in the research population. Using standard sample size calculation techniques, a minimum sample size of 75 was established based on prevalence rates provided in the study by Bruno Garcia Dias.

Patients between the ages of 18 and 75 and those who have had hernioplasty (open or laparoscopic mesh repair) are eligible to be considered. Patients who had non-mesh repairs (such as Bassini's or hybrid procedures) or emergency hernia repairs for blockage or gangrene are excluded. Hospital data were used to identify patients who had hernioplasty after receiving

approval from the Institutional Ethics Committee. After contacting those who satisfied the inclusion requirements, informed consent was acquired.

The participants were split into two groups: one for open Lichtenstein hernioplasty and one for laparoscopic hernioplasty. Patients were assessed further if they indicated that their groin pain persisted for longer than three months following surgery. Initially, a Visual Analogue Scale (VAS) was used to measure pain. A Neuropathy Questionnaire, intended to detect neuropathic symptoms like tingling, numbness, or touch-evoked pain, was used to assess patients who experienced chronic pain. Inguinodynia was diagnosed in patients who satisfied the diagnostic requirements outlined in the questionnaire.

Excel was used to enter the data, while SPSS was used for analysis. The categorical variables were displayed as percentages and frequencies. Mean±SD was used to represent continuous variables. Where necessary, appropriate statistical tests (such as the t-test and chi-square test) were used, and tables and graphs were used to illustrate the results.

RESULTS AND DISCUSSIONS

Out of 75 patients, the majority (40%) were in the age group of 31–40 years. The next most common age groups were 41–50 years (17.33%) and 21–30 years (16%). Only one patient (1.33%) was aged above 70 years.

Primary inguinal hernia was the predominant type, found in 90.67% of cases. Recurrent hernias were observed in 9.33% of patients.

Open hernioplasty was the most commonly performed procedure (42.67%), followed by Transabdominal Preperitoneal Repair (TAPP) in 33.33% and Totally Extraperitoneal Repair (TEP) in 24% of patients.

Unilateral hernias were observed in 70.67% of patients, whereas bilateral hernias were present in 29.33%.

All patients (100%) underwent hernioplasty using polypropylene mesh.

Polypropylene sutures were the most commonly used material for mesh fixation (69.33%), followed by tackers (18.67%). In 12% of cases, no fixation was used.

Postoperative inguinodynia was reported in 12% of patients, while 88% did not experience this complication.

Neuropathic inguinodynia occurred in 5.33% of patients postoperatively, with the majority (94.67%) remaining free of neuropathic pain.

The highest incidence of inguinodynia (23.08%) was noted among patients aged 41–50 years. However, the association between age and inguinodynia was not statistically significant (p = 0.8051).

Neuropathic inguinodynia was slightly more common in patients aged 31–60 years but showed no statistically significant association with age (p = 0.942).

Inguinodynia was most frequently reported following open hernioplasty (15.63%), followed by TEP (11.11%) and TAPP (8%). The difference was not statistically significant (p = 0.6735).

Inguinodynia was more common following open hernioplasty (15.63%) compared to laparoscopic repair (9.3%), but this difference was not statistically significant (p = 0.4046).

The incidence of neuropathic inguinodynia was comparable across all surgical techniques: 6.25% in open repair, 5.56% in TEP, and 4% in TAPP. No statistically significant difference was observed (p = 0.9309).

Neuropathic inguinodynia was slightly higher in open repairs (6.25%) compared to laparoscopic repairs (4.65%), though this was not statistically significant (p = 0.7605).

Bilateral hernias had a higher incidence of inguinodynia (21.05%) compared to unilateral hernias (8.93%), but the association was not statistically significant (p = 0.1599).

Neuropathic inguinodynia was more common in bilateral hernias (10.53%) than unilateral ones (3.57%), but this difference was not statistically significant (p = 0.2436).

Recurrent hernias showed a higher rate of inguinodynia (28.57%) compared to primary hernias (10.29%), though the difference did not reach statistical significance (p = 0.1564).

Neuropathic inguinodynia was significantly more common in patients with recurrent hernias (28.57%) than those with primary hernias (2.94%) (p = 0.004), indicating a strong association.

The incidence of inguinodynia was highest when tackers were used (21.43%), compared to polypropylene sutures (11.54%). No inguinodynia was observed when no material was used. This difference was not statistically significant (p = 0.2987).

Neuropathic inguinodynia was observed more frequently when tackers were used (14.29%) as compared to polypropylene sutures (3.85%). No Neuropathic inguinodynia was observed when no material was used. However, the difference was not statistically significant (p = 0.2279).

A cross-sectional study was conducted in the General Surgery Department at PES Institute of Medical Sciences and Research, Kuppam. It compared chronic groin discomfort (inguinodynia) after hernioplasty with open Lichtenstein and laparoscopic mesh repair. The study recruited 18-75-year-olds with groin pain after three months of surgery. Visual analogue scales and neuropathic pain questionnaires assessed pain.

Most of the 75 patients in this study were 31-40 years old, accounting for 40% of the population. Then came 41-50 (17.33%) and 21–30 (16%). Few patients

Table 1: Age Distribution of Patients

Age	Frequency	Percentage
< 20 years	2	2.67%
21-30 years	12	16.00%
31-40 years	30	40.00%
41-50 years	13	17.33%
51-60 years	11	14.67%
61-70 years	6	8.00%
71-75 years	1	1.33%
Total	75	100.00%

Table 2: Type of Hernia

Type of Hernia	Frequency	Percentage
Primary	68	90.67%
Recurrent	7	9.33%

Table 3: Type of Hernioplasty Performed

Type of Hernioplasty	Frequency	Percentage
Trans Abdominal Repair (TAPP)	25	33.33%
Totally Extraperitoneal Repair (TEP)	18	24.00%
Open Hernioplasty	32	42.67%

Table 4: Laterality of Hernia

Side Affected	Frequency	Percentage
Unilateral	53	70.67%
Bilateral	22	29.33%

Table 5: Type of Mesh Used

Mesh	Frequency	Percentage
Polypropylene	75	100.00%

Table 6: Material Used for Mesh Fixation

Material used for mesh fixation	Frequency	Percentage
Polypropylene	52	69.33%
Tackers	14	18.67%
None	9	12.00%

Table 7: Incidence of Inguinodynia

Inguinodynia	Frequency	Percentage
Yes	9	12.00%
No	66	88.00%

Table 8: Incidence of Neuropathic Inguinodynia

Neuropathic Inguinodynia	Frequency	Percentage
Yes	4	5.33%
No	71	94.67%

Table 9: Inguinodynia by Age Group

Age	Inguinodynia present		Inguinodynia absent		Total
	N	%	N	%	
< 20 years	0	0.00%	2	100.00%	2
21-30 years	1	8.33%	11	91.67%	12
31-40 years	4	13.33%	26	86.67%	30
41-50 years	3	23.08%	10	76.92%	13
51-60 years	1	9.09%	10	90.91%	11
61-70 years	0	0.00%	6	100.00%	6
71-75 years	0	0.00%	1	100.00%	1
p-value	0.8051				

Table 10: Neuropathic Inguinodynia by Age Group

Age	Neuropathic Inguinodynia present		Neuropathic Inguinodynia absent		Total
	N	%	N	%	
< 20 years	0	0.00%	2	100.00%	2
21-30 years	0	0.00%	12	100.00%	12
31-40 years	2	6.67%	28	93.33%	30
41-50 years	1	7.69%	12	92.31%	13
51-60 years	1	9.09%	10	90.91%	11
61-70 years	0	0.00%	6	100.00%	6
71-75 years	0	0.00%	1	100.00%	1
p-value	0.942				

were under 20 (2.67%) and over 60 (9.33% for the 61-70 and 71-75 age groups). This distribution shows that younger adults dominate the clinical scenario. Compared to Bhambhani D *et al*. (2022)[12], these findings show a different age pattern. The majority (61.29%) of 186 patients were 60-79 years old. Middle-aged adults (40-59 years) made up 37.63%, while younger adults (20-39 years) made up 8.6%. This stark difference suggests that Bhambhani D *et al*.'s[12] study investigated a condition more common in

Table 11: Inguinodynia by Type of Hernioplasty

Type of Hernioplasty	Inguinodynia present		Inguinodynia absent		Total
	N	%	N	%	
Trans Abdominal Repair (TAPP)	2	8.00%	23	92.00%	25
Totally Extraperitoneal Repair (TEP)	2	11.11%	16	88.89%	18
Open Hernioplasty	5	15.63%	27	84.38%	32
p-value	0.6735				

Table 12: Inguinodynia: Laparoscopic vs Open Repair

Type of Hernioplasty	Inguinodynia present		Inguinodynia absent		Total
	N	%	N	%	
Laparoscopic	4	9.30%	39	90.70%	43
Open Hernioplasty	5	15.63%	27	84.38%	32
p-value	0.4046				

Table 13: Neuropathic Inguinodynia by Type of Hernioplasty

Type of Hernioplasty	Neuropathic Inguinodynia present		Neuropathic Inguinodynia absent		Total
	N	%	N	%	
Trans Abdominal Repair (TAPP)	1	4.00%	24	96.00%	25
Totally Extraperitoneal Repair (TEP)	1	5.56%	17	94.44%	18
Open Hernioplasty	2	6.25%	30	93.75%	32
p-value	0.9309				

Table 14: Neuropathic Inguinodynia: Laparoscopic vs Open Repair

Type of Hernioplasty	Neuropathic Inguinodynia present		Neuropathic Inguinodynia absent		Total
	N	%	N	%	
Laparoscopic	2	4.65%	41	95.35%	43
Open Hernioplasty	2	6.25%	30	93.75%	32
p-value	0.7605				

Table 15: Inguinodynia by Side Affected

Side Affected	Inguinodynia present		Inguinodynia absent		Total
	N	%	N	%	
Unilateral	5	8.93%	51	91.07%	56
Bilateral	4	21.05%	15	78.95%	19
p-value	0.1599				

Table 16: Neuropathic Inguinodynia by Side Affected

Side Affected	Neuropathic Inguinodynia present		Neuropathic Inguinodynia absent		Total
	N	%	N	%	
Unilateral	2	3.57%	54	96.43%	56
Bilateral	2	10.53%	17	89.47%	19
p-value	0.2436				

Table 17: Inguinodynia by Type of Hernia

Type of Hernia	Inguinodynia present		Inguinodynia absent		Total
	N	%	N	%	
Primary	7	10.29%	61	89.71%	68
Recurrent	2	28.57%	5	71.43%	7
p-value	0.1564				

Table 18: Neuropathic Inguinodynia by Type of Hernia

Type of Hernia	Neuropathic Inguinodynia present		Neuropathic Inguinodynia absent		Total
	N	%	N	%	
Primary	2	2.94%	66	97.06%	68
Recurrent	2	28.57%	5	71.43%	7
p-value	0.004				

Table 19: Inguinodynia by Mesh Fixation Method

Material used for mesh fixation	Inguinodynia present		Inguinodynia absent		Total
	N	%	N	%	
Polypropylene	6	11.54%	46	88.46%	52
Tackers	3	21.43%	11	78.57%	14
None	0	0.00%	9	100.00%	9
p-value	0.2987				

geriatric patients or that their sample was drawn from a geriatric care or tertiary hospital where older adults with chronic or advanced disease were over-represented. It may also indicate late diagnosis or delayed healthcare-seeking among older people in that demographic.

Table 20: Neuropathic Inguinodynia by Mesh Fixation Method

Material used for mesh fixation	Neuropathic Inguinodynia present		Neuropathic Inguinodynia absent		Total
	N	%	N	%	
Polypropylene	2	3.85%	50	96.15%	52
Tackers	2	14.29%	12	85.71%	14
None	0	0.00%	9	100.00%	9
p-value	0.2279				

The study's younger patients may represent etiological, lifestyle, or professional characteristics that affect young productive people. This may be due to increased awareness or effective early detection in this population. The low number of elderly patients may be attributed to under reporting, exclusion of comorbid elderly, or demographic disparities in population structure and healthcare access.

Another consideration is that inclusion criteria, setting (urban vs. rural, primary vs. tertiary care), and sample size can affect age-related findings across research. Bhambhani *et al*.[12] show patterns more prevalent in middle-aged to older persons, however this study may show an earlier disease stage or a distinct clinical spectrum.

The comparison shows significant age heterogeneity among studies. The present analysis shows a peak in the third and fourth decades, although Bhambhani D *et al*.[12] found a larger incidence in the fifth, sixth, and seventh decades. This variance emphasises the need to contextualise study findings using demographic, clinical, and methodological frameworks and age-tailored preventative and care methods across population groups. Primary hernias accounted for 90.67% of cases in this study. Recurrent hernias occurred in 9.33% of patients. This distribution suggests that most patients seeking surgery were experiencing their initial herniation, not a recurrence after previous treatment.

In general surgery, primary hernias make up most operational patients, explaining the high proportion. Better surgical procedures, mesh-based repairs, postoperative care, and patient education may minimise recurrence. Effective primary repair methods, mesh material and installation techniques, attentive patient follow-up, and lifestyle change advice post-surgery may further explain this study's low recurring hernia rate.

Although low, the study's 9.33% recurrence rate emphasises the significance of careful first hernia repairs. Technical errors, poor mesh fixation, repair tension, or patient variables including obesity, smoking, chronic cough, or rigorous activity often cause recurrences. These risk factors must be identified and addressed to prevent recurrence and improve surgical results.

This study shows a favourable trend with a low recurrence rate and supports current surgical techniques for initial hernias. Continued efforts are needed to monitor results and reduce even this tiny burden of recurrent herniation through targeted surgical planning and prevention. A cohort of 75 individuals was examined for hernia repair surgery. Open hernioplasty was the most prevalent operation, accounting for 42.67%. However, 33.33% of patients received laparoscopic Transabdominal Preperitoneal (TAPP) surgery and 24% underwent TEP repair. This distribution suggests that improved laparoscopic techniques are becoming more common in surgery, with the open method still used for certain procedures. Open hernioplasty is still the standard of care for big or difficult hernias, previous abdominal surgeries, and resource-limited situations. Open repair predominates in this study, indicating that surgeon expertise, patient circumstances, or institutional preferences favour it over laparoscopic treatments. However, the high use of TAPP and TEP procedures in this study suggests an institutional preference for minimally invasive surgery and well-trained laparoscopic doctors.

These findings differ with Prasad D *et al*. (2020),[10] who evaluated 460 patients. The majority of their cohort had open inguinal hernia surgery (67.39%), while 32.61% had laparoscopic treatment. Due to cost, laparoscopic infrastructure, or institutional training norms, open repair may still be favoured. Their study had fewer laparoscopic operations than the present study, which may reflect regional surgical practise patterns.

Kumar S *et al*. (2023)[11] examined 230 patients and found that Lichtenstein repair, a tension-free open mesh repair approach, was performed in 43.48% of cases, similar to the open hernioplasty rate in our study. Laparoscopic methods like TAPP (26.09%) and TEP (13.04%) were used less than in this study. This implies that while laparoscopic techniques are growing more popular, cost, learning curves, and equipment limitations may still limit their use in some clinical situations.

The present study shows a balanced and progressive hernia surgery technique. While open hernioplasty remains popular, laparoscopic procedures (TAPP and TEP) are becoming more popular as less invasive surgery becomes more common. This study shows a more progressive use of laparoscopy than Prasad D *et al*.[10] and Kumar S *et al*.[11], indicating institutional expertise and advanced surgery. To improve hernia repair outcomes, surgical planning should be based on patient characteristics, surgeon experience, and resource availability.

In this 75-patient study, 70.67% of hernias were unilateral, whereas 29.33% were bilateral. This

matches epidemiological patterns in hernia studies, where unilateral involvement-especially on the right-predominates over bilateral presentation. Anatomical and physiological factors cause unilateral hernias to be common. The right-sided inguinal canal closes later during embryology and may herniate more easily. The current dataset did not subclassify laterality by side, but research implies that right-sided hernias are more prevalent. While rare, bilateral hernias are clinically significant, especially in elderly patients, those with connective tissue problems, and those with a familial history.

The present study found a 29.33% bilateral hernia rate, which is greater than several general population-based studies that show 10–20% bilateral involvement. A selection bias in the surgical population or increased use of laparoscopic methods, which improve intraoperative visibility of the contralateral side, may explain this higher proportion. Unless investigated, accidental or asymptomatic contralateral hernias may be missed in open surgery.

Identification of bilateral hernias affects surgery planning. With minimal morbidity, laparoscopic TAPP and TEP can treat both sides in one surgery. This reduces operative time, anaesthesia exposure, and hospital stay while enhancing cost-effectiveness. However, bilateral repair with open surgery needs separate incisions, which increases postoperative discomfort and recovery time. According to this study, unilateral hernias are the most prevalent, but approximately one-third are bilateral, requiring thorough preoperative and intraoperative examination. The high proportion of bilateral occurrences indicates that laparoscopic hernioplasty can provide comprehensive and minimally invasive therapy in such cases.

No fixation in 12% of the study's cases may indicate a surgical preference for mesh implantation methods that lessen foreign body load and nerve discomfort. In laparoscopic TEP repairs, the preperitoneal space's anatomical pressure can anchor the mesh without fixation, reducing postoperative pain and complications.

Overall, suture-based mesh fixation remains preferred, supporting traditional open procedures. Tackler use was lower than in Selvakumar S *et al*., possibly due to cost restrictions, institutional protocols, or surgeon familiarity. Though limited, the trend of non-fixing emphasises the need for individualised surgical techniques to optimise patient outcomes and reduce fixation material problems.

Inguinodynia, defined as persistent groin discomfort after hernioplasty, was identified in 12% (9 out of 75) of patients, while 88% had no symptoms. This low percentage of chronic postoperative pain suggests good surgical outcomes and may be due to careful mesh installation, nerve management, and surgical technique. The present study found a substantially lower rate of inguinodynia than Prasad D *et al*.(2020),[10], who reported 22.17% in 460 patients. Bhambhani D *et al*. (2022)[12] found 23.24% incidence in 200 individuals, again higher than in the current study. These discrepancies may be due to surgical technique (open vs. laparoscopic), surgeon experience, mesh and fixation method, and nerve identification and preservation during hernia repair.

The lower rate in this study may also be due to a higher number of laparoscopic repairs (57.33%), which minimise nerve injury and chronic groin discomfort compared to open methods. The ilioinguinal, iliohypogastric, and genitofemoral nerves are easier to see and avoid with laparoscopic surgery.

In other studies, open mesh repairs (e.g., Lichtenstein technique) are more common, which may increase the risk of nerve entrapment or irritation if meticulous dissection and nerve identification are not done. Variations in postoperative pain assessment techniques, chronic pain criteria, and follow-up periods can also affect incidence rates. Patients experiencing temporary discomfort or early postoperative pain may increase inguinodynia rates in several studies. A 12% incidence of inguinodynia in this study supports successful surgery with little chronic morbidity. Compared to Prasad *et al*.[10] and Bhambhani D *et al*. [12], these data show that minimally invasive and accurate operational procedures reduce long-term consequences such persistent groin pain. Maintaining nerve preservation, mesh selection, and patient education can improve postoperative quality of life.

The present study examined inguinodynia across age groups in 75 patients. The 41-50 age group had the highest incidence (23.08%), followed by 31-40 (13.33%) and 51-60 (9.09%). Inguinodynia was not documented in patients under 20 or beyond 60. The statistical comparison across age groups showed no significant association between age and inguinodynia (p=0.8051). These findings show that inguinodynia is more common in middle-aged adults, possibly due to increased physical activity, occupational strain, or pain perception. Inguinodynia was absent in older age groups due to reduced activity levels, altered pain thresholds, or a smaller sample size in this study.

The distribution pattern differs with Prasad D *et al*. (2020)'s[10] 460-patient research. In their cohort, 50–60 years had the highest incidence (6.52%), followed by 40-50 years (4.78%) and 60-70 years (3.91%). This shows a slower decline in inguinodynia incidence with age, consistent with the present study's middle-age clustering.

The two studies differed due to sample size, surgical procedure, postoperative pain evaluation criteria, and follow-up period. Prasad et al.'s [10] larger sample has stronger statistical power, but the present study's smaller sample may have led to higher

percentages due to fewer instances across age categories. This study examined inguinodynia incidence by hernioplasty type. Open hernioplasty patients had the highest rate of inguinodynia, with 15.63% (5/32) experiencing prolonged postoperative groin pain. TEP was related with inguinodynia in 11.11% (2 of 18 patients), while TAPP had the lowest frequency at 8.00% (2 of 25 patients).

The absolute findings indicate a trend towards a higher incidence of chronic pain in open operations, however the statistical analysis showed a p-value of 0.6735, showing that the difference in inguinodynia incidence among the three surgical approaches was not statistically significant Laparoscopic techniques (TAPP and TEP) are generally associated with decreased rates of persistent postoperative pain due to superior visualisation, less tissue trauma, and fewer nerve entrapment or injury, according to current data.

Open repairs may have a higher incidence due to direct manipulation or injury to the ilioinguinal, iliohypogastric, or genitofemoral nerves during dissection and mesh implantation. Furthermore, open procedure fixation methods such polypropylene sutures may cause nerve irritation or entrapment, increasing the risk of inguinodynia.

TAPP and TEP laparoscopic repairs allow improved nerve identification and avoidance due to their clear anatomical picture. Laparoscopic methods often minimise or eliminate mesh fixation, minimising postoperative neuropathic problems.

CONCLUSION

This study shows that Inguinodynia developed in 12% of patients, and 5.33% experienced neuropathic pain. Although most factors didn't show statistical significance, recurrent hernias clearly led to more neuropathic pain. Laparoscopic repairs resulted in fewer pain complaints than open procedures. These findings emphasize the importance of careful patient selection, meticulous nerve-sparing techniques, and appropriate surgical planning to improve postoperative outcomes and reduce the risk of chronic groin pain.

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