

Chronic Post Inguinal Herniorrhaphy Pain: Prevalence and Risk Factors

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Abstract

Background: Inguinal hernia is a common surgical condition. Whereas complications associated with hernia repair are well documented, chronic post-operative groin pain has received less attention. **Objective:** To review the frequency and associated risk factors for chronic post herniorrhaphy groin pain at a tertiary urban hospital. **Methods:** A retrospective descriptive study using data retrieved from patient files and theatre logs was conducted. Only inguinal herniae patients 13 years and above were considered. Pain was self reported at least 3 months to 2 years after repair. **Results:** Eighty nine patient data were

analyzed. Mean aged was 40.5 years, Male:Female ratio was 6:1. Fifteen (17%) patients reported pain lasting > 3 months. No significant age difference was noted between those with pain and the pain free. All those with chronic pain were male. **Conclusion:** Inguinodynia was common in this population. Post herniorrhaphy pain predictive risk factors in this population ought to be investigated.

Keywords: Chronic Pain, Inguinal Hernia Repair, Pain, Surgery

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Introduction

Inguinal hernia is a common surgical condition (1-3). Whereas other complications associated with their repair are well documented, chronic post-operative pain at the site of the operation is only recently been focused on (4-5). Chronic groin pain following inguinal hernia repair is a potentially incapacitating complication, and presents a diagnostic and therapeutic challenge to the clinician (6). The exact cause for the pain is not clear. However, it is believed to be due to entrapment of the ilioinguinal, iliohypogastric or genital branch of the genitofemoral nerve either in the sutures, mesh or scar tissue (7-9). This complication is related to age, gender, BMI, the operator's experience and method used though a special interest is placed on the role of nerve damage (5,10). The purpose of this study therefore was to establish the prevalence population and described selected associated factors of chronic post inguinal hernia repair in a group of patients at a tertiary hospital in an urban setting.

Methods

This was a retrospective descriptive study conducted at an urban 150 bed private tertiary hospital, with an outpatient turnover of 80,000 patient visits a year with approximately 2400 surgical procedures (all disciplines) per annum. Patients financing for hospitalization was covered either by private health insurance or out of pocket cash payments. All patients that had undergone an inguinal hernia repair over a 24 months period 2010 – 2013 were eligible. They all had undergone either a darn plication or modified Bassini repair methods as per the operating surgeon's preference. No mesh repairs were performed over that period. A questionnaire was used to collect data and the following variables were considered; method of repair, age, gender, occurrence of pain lasting at least 3 months(11), and recurrence of the hernia.

Details of all patients who had undergone an inguinal hernia repair in the stated period were retrieved from the theatre logs and clinical notes. Those who had not returned for a review at the three months point

were contacted via telephone for a brief interview. All patients were interviewed using preset questions about presence of pain at the operation site, duration of pain and management of the pain including analgesia or reoperation. Recurrence of hernia was confirmed by a surgical review/examination. At this facility, patients are routinely reviewed up to six months (3 visits) after repair and encouraged to return for any unscheduled visit in case of any concern such as pain, swelling, fever or other complications. This list of concerns is routinely discussed before discharge.

Results

There were 89 patients with a mean age of 40.5 years. Hernias occurred mostly in males, with a M:F ratio of 6:1 (see table 1). Fifteen patients reported post operative pain lasting at least 3 months. Four of the patients (4.5%) had recurrence of the hernia and were re-operated.

Table 1: Demographic and Clinical Characteristics

Characteristics	
Mean	40.5 years
Range	13 – 82 years
M:F ratio	6:1
Left sided	23
Right sided	46
Bilateral hernia	4
Repair due to recurrent hernia	4
Inguino- scrotal	26
Number with pain for \geq 3months (post repair)	15
Number that required at least oral analgesics	15
Number of surgeons†	3
Techniques used	darn and modified Bassini
Elective procedures	86
Emergency procedures	3
Characteristics of those who had chronic pain	
Right side hernia	7
Left side hernia	5
Recurrent hernia	1
Inguino-scrotal	3
Age Mean	40
Age range	17-62
Gender	
Male	15
Female	0

†The three surgeons were general surgeons with mean experience of 8 years.

Discussion

The study set out to investigate the frequency of groin pain after hernia repair. We found that it was common and was present many months after the surgery. The incidence of chronic pain after inguinal hernia has been estimated to be between 1% and 19% (12-14),

though some report up to 40% occurrence (15). In this study we found a 17% occurrence rate.

Pain was more likely to occur in males, probably because more men than women develop inguinal herniae (11). The numbers in this series were small so this finding could have been a chance occurrence.

There was a small number of emergency procedures perhaps because this is a private hospital and the clientele health seeking behavior is such that they present before the condition becomes an emergency. Majority of the patients were covered by health insurance which encourages early access to care. Chronic severe pain following inguinal hernia repair is a significant post-operative problem and may be debilitating in up to 6% of patients that undergo the repairs (10,16). Its unclear etiology and the lack of evidence-based treatment pose present problems in the effective management of this surgical complication (5,10).

However the concept that surgical injury causes chronic pain is well established (17-21). Examples of chronic pain after surgery are leg amputation, thyroidectomy, cholecystectomy and breast surgery. Available data suggests that chronic groin pain is neuropathic due to inguinal nerve(s) damage or compression. Non-neuropathic pain is due to the resulting scar or mechanical pressure from a mesh although not all the intra operative nerve damage (nerve lesion) necessarily lead to a chronic pain state. Other sensory abnormalities may play a part, such as genetically determined neuropathic pain (22,23). In this series, no mesh was used with patients undergoing darn plication and modified Bassini repairs.

To determine the risk of post operative pain, several predictive factors should be assessed pre operatively including; preoperative pain, psychological vulnerability, radiation therapy, depression and anxiety but they are often not (19, 20). Post operatively a thorough history and meticulous clinical examination should be performed to identify the exact cause of chronic groin pain, as there is no single test to confirm the etiology behind the pain or to point out the exact nerve involved. The symptom complex of chronic groin pain varies from a dull ache to sharp shooting pain along the distribution of inguinal nerves (24). In this study less than half of the patients returned to seek care at the facility and the rest probably sought help elsewhere or self medicated. Low turn out for patients with inguinodynia can lead to underestimation of the true prevalence of the problem.

Some authors suggest that the most common cause of

nerve injury (leading to chronic Inguinodynia) is failure to identify and protect. They also suggest neurectomy as a treatment option (25). The other options though not currently available in our practice are pulsed radio frequency, spinal cord stimulation, peripheral nerve stimulation and transcutaneous electrical nerve stimulation (26, 27, 28, 29). However the reported results in review articles are not robust (5).

Study limitations

This being a retrospective study, there may have been recall bias of the symptoms duration. However we argue that significant and persistent pain would not be easily forgotten. We didn't assess for mental disorders such as depression this could potentially increase the perception of pain and may lead to over reporting nor did we differentiate between neuropathic and non-neuropathic pain.

Conclusion

Chronic pain after hernia repair is a significant problem, patients should be adequately warned about it as part of the written informed consent, Surgeons are encouraged to actively follow up with patients to address it and further studies to explore predictive risk factors are encouraged.

Authors' contributions

GM & AN collected the data. GM performed the analysis and wrote the manuscript. All authors provided critical review for intellectual content. All authors approved of the final draft.

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