



Original Research

Persistent postherniorrhaphy pain following inguinal hernia repair: A cross-sectional study of prevalence, pain characteristics, and effects on quality of life



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HIGHLIGHTS

- Neuropathic pain due to the herniorrhaphy is a serious problem.
- The purpose of this study was performed to assess the prevalence of chronic pain after inguinal hernia repair and the effects on the quality of life.
- The incidence of chronic pain after inguinal hernia surgery was 23.48% in our study. DN-4 and IPQ are very useful test for diagnosis.

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ABSTRACT

Introduction: Chronic inguinal pain due to the inguinal hernia repair is still a serious consideration, and its incidence is evident in approximately 3%–6% of the patients. The purpose of this study was performed to assess the prevalence of chronic pain after inguinal hernia repair and the effects on the quality of life in our patient.

Methods: The records of the patients who were 18 years of age or older and had had an inguinal hernia repair under spinal anesthesia after receiving a diagnosis of inguinal hernia at this hospital from 2009 to 2015 were accessed through the hospital's data system. Patients who had signed the informed consent agreement were given an Inguinal Pain Questionnaire (IPQ) and a Douleur Neuropathique 4 (DN-4) questionnaire after recording their demographic data on the appointment day. Surgical incision line was evaluated with a dolorimeter and mild touch hypoesthesia, needle-touch hypoesthesia, brushing allodynia were evaluated with cotton, and 0.711 mm diameter Von-Frey filament (Touch-Test Sensory Evaluator Kit; North Coast Medical, Inc., Gilroy, CA, USA).

Results: The total number of patients who had ASA I-II scores and who had undergone a one-sided inguinal hernia repair under spinal anesthesia in elective conditions with at least three or more months of recovery time months was 619. Of these 264 patients, 203 with absence of pain (score of the severest pain over the past week and now was 0) were classified as the Non-Pain group and 61 patients with inguinal pain (score of the severest pain over the past week or now was 1 or more) were classified as the Pain group.

The incidence of chronic pain after inguinal hernia surgery was 23.48% ($n = 61$) in our study. The pain was localized at and near the surgical incision and radiated into the scrotum in 17.73% ($n = 36$) of the male patients having chronic pain. While chronic pain developed in 60 out of 239 patients who had pain prior to the surgery. The presence of pain prior to the surgery was evaluated as an effective factor for the chronic groin pain. Neuropathic pain was detected with the DN-4 questionnaire in 6 (2.95%) out of 203 patients who stated that they had no pain during the physical examination and the week prior to the exam. The frequency of chronic pain after inguinal hernia repair was found 23.48% in our study. This is

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the same rate as previously reported. Quality of life of these patients was affected. We believe that there is an urgent need for prospective randomized studies with the aim of determining a standardized methodology towards preventive measures after determining the risk factors of chronic pain developed in the post inguinal hernia repair period.

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1. Introduction

Inguinal hernia repair is a surgical method commonly applied in adult patients. Worldwide it is applied to more than 20 million people every year [1,2]. With the aid of modern surgical techniques, it results in a low morbidity rate and enables the patient to quickly return to work and once again engage in social life. Although complications of this surgery have greatly decreased of late, chronic inguinal pain due to the operation is still a serious consideration, and its incidence is evident in approximately 3%–6% of the patients [3,4].

Lasting for at least three months after surgery and negatively affecting quality of life, chronic inguinal pain develops for several different reasons, including surgical dissection site nerve (ilioinguinal, iliohypogastric, genitofemoral, lateral femoral cutaneous nerve) trauma, hernia relapse, and mesh reaction, and it is generally neuropathic in nature [5]. Chronic pain etiology developing after hernia repair is varied and complicated. It has been thought that neuroma formation due to nerve damage plays a role in its etiology. While nerve damage can occur from manipulation, traction, or thermal damage due to cautery during the surgery, it can also occur from an extreme inflammation that develops from a fibrotic mesh reaction after the surgery or from a granuloma [6]. Risk factors are repeated surgery, untreated post-operative pain, radiotherapy, neurotoxic chemotherapy, anxiety disorders, and depression-like psychiatric disorders, as well as the applied surgical technique [7,8].

Most patients describe the neuropathic pain in the form of hypoaesthesia, dysesthesia, allodynia, or hyperalgesia at the surgical incision site or its vicinity. Neuropathic pain developing as a result of the hernia repair renders the patient weak, negatively influences the work and social life of the patient, causes affective and sleep disorders, and definitely requires treatment [9].

The purpose of this study was performed to assess the prevalence of chronic pain after inguinal hernia repair and the effects on the quality of life in our patient.

2. Methods

After obtaining the Ethics Committee approval, the records of the patients who were 18 years of age or older and had had an inguinal hernia repair under spinal anesthesia after receiving a diagnosis of inguinal hernia at this hospital from 2009 to 2015 were accessed through the hospital's data system. Patients who had an American Society of Anesthesiology (ASA) I-II physical score, who were 18 years of age or older, and who had had at least three months recovery time after their one-sided inguinal hernia repair were informed about the study by telephone. The patients, after giving their verbal approval, were assigned an appointment and invited to the hospital to be evaluated for chronic pain. The patients who had had a repeat surgery on the side of the inguinal hernia repair or previous inguinal hernia repair on the opposite side, any abdominal surgery, or an associated systemic disease that causes the chronic pain stage (diabetes mellitus, neuropathic pain, ischemic diseases, etc.) were excluded from the study (Fig. 1).

Patients who had signed the informed consent agreement were given an Inguinal Pain Questionnaire (IPQ) and a Douleur Neuropathique 4 (DN-4) questionnaire after recording their demographic data on the appointment day. The IPQ scales the pain intensity in the inguinal region in terms of the pain character as multi-dimensional. To what extent the inguinal pain affects the daily life and the quality of life of the patient over the long term and at the current time is evaluated accurately and precisely by IPQ prior to surgery. The IPQ inquires about the severest pain experienced in the week prior to the questionnaire administration, and it also provides the opportunity to evaluate pain on the opposite side from where the inguinal repair was performed. Patients are questioned about how much life activities, such as climbing upstairs, driving, sitting and rising from a chair, and exercise performance, are affected. Labor loss due to the duration and intensity of the pain, the need to see a physician or use a medicine, and the presence of a reflective pain in the testicle on the repair side in male patients are evaluated with the IPQ. In our study, we gave one point for each

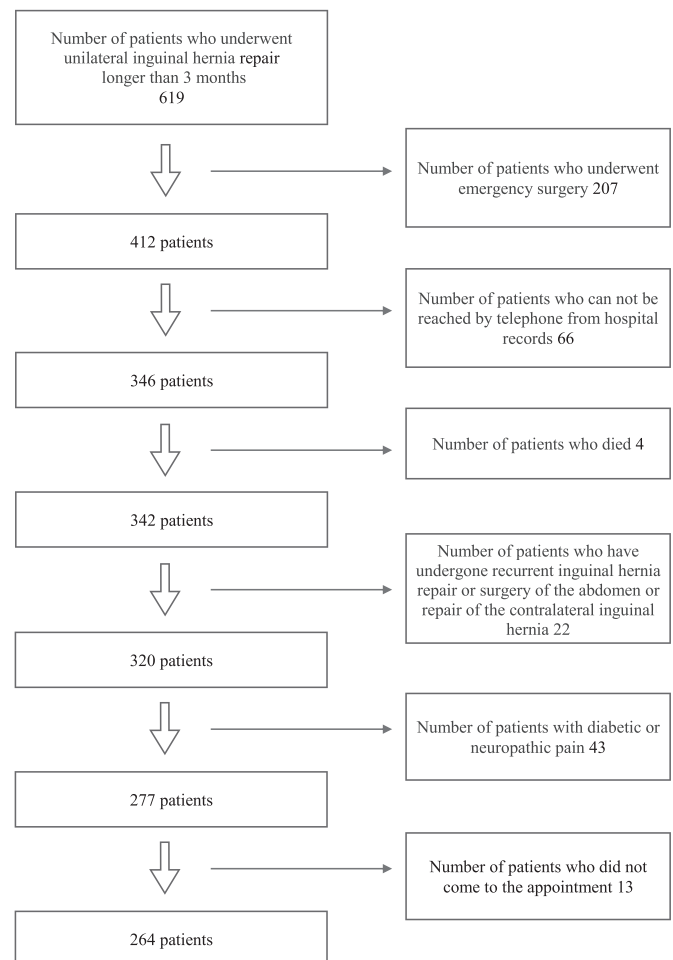


Fig. 1. Chart depicting patient flow.

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