Journal of Clinical and Investigative Surgery

https://doi.org/10.25083/2559-5555
https://proscholar.org/jcis/
ISSN: 2559-5555

Bifemoral hernias concurrent with direct and indirect inguinal hernias in a single patient; A case report

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ABSTRACT

Bilateral femoral and inguinal hernias are a rare co-occurrence related to abdominal wall pathology, and can lead to various complications such as incarceration, strangulation and high postoperative recurrence. This article presents a patient who complained of bilateral pain and pseudotumoral formations of the inguinal areas, being diagnosed during surgical intervention with bilateral femoral hernias in association with bilateral (direct and indirect) inguinal hernias. Generally, the laparoscopic method is reported to have several advantages, such as less postoperative pain, fewer postoperative infections, and rapid return to daily activities. In the presented case, the surgical team performed an open/Lichtenstein operation, due to the patient's age, shorter operating time, lower likelihood of recurrence and postoperative complications, as well as low cost. Considering the significant morbidity/mortality rates of multiple and complicated hernias, it is necessary that an accurate diagnosis and appropriate treatment be instituted as early as possible.

Category: Case Presentation

Received: June 11, 2022
Accepted: August 27, 2022
Published: November 20, 2022

Keywords:

inguinal hernia, femoral hernia, Lichtenstein, ultrasonography

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Introduction

Inguinal hernia is a widespread problem and accounts for 75% of abdominal wall hernias, with a probability of incidence of 27% in men and 3% in women [1-3]. On the other hand, the majority of femoral hernias is about 2-8% in adults and is four times higher in women than in men because the structure of the pelvis is widened in women. Femoral hernias represent only 2-4% of all inguinal-femoral hernias, and 10% of femoral hernias are found bilaterally [4,5]. Inguinal hernias are more common than femoral hernias, but femoral hernia is more commonly associated with complications such as incarceration and can result in significant mortality and morbidity [6,7]. More than three simultaneous bilateral inguinal and femoral hernias are a very rare condition [8]. The main therapeutic approach in such cases is surgical intervention. The choice between different surgical methods depends on various factors, such as the condition of the patient and the preference of the surgical team, in order to lead to the selection of the best procedure with the most beneficial outcome for the patient [1,2]. The main imaging method to diagnose this condition is ultrasonography, but it depends on the experiences of the doctor [9]. In this article, we present an elderly man with bilateral inguinal pseudotumoral formations and pain, with a preliminary diagnosis of bilateral inguinal hernia. Intraoperatively, the diagnosis was completed, as simultaneous bilateral (direct and indirect) inguinal hernias and bilateral femoral hernias were found.

Case presentation

An 85-year-old patient presented to the surgical emergency department of Poursina Hospital, Rasht, Iran, in January 2022, with a complaint of bilateral pain and bulging of inguinal areas. The patient had no other associated disease. He claimed that the pain started suddenly from the last five days, noting that the pain was moderate at first but gradually increased until it became unbearable when he presented at the hospital. He had no nausea, vomiting, urinary incontinence, frequent urination, or fever. The pain was not relieved with painkillers. He also noted a normal bowel transit for gas and stool. On physical examination, moderate to severe tenderness was detected

To cite this article: Torabi H, Shirini K, Ghaffari R. Bifemoral hernias concurrent with direct and indirect inguinal hernias in a single patient; A case report. *J Clin Investig Surg*. 2022;7(2):229-233. doi: 10.25083/2559.5555/7.2.20

in both inguinal areas with a right-sided predominance, but no erythema. Another bilateral bulging was detected above and medial previous hernias during the Valsalva maneuver. All of the patient's vital signs were within normal limits and an abdominal and inguinal ultrasound was performed revealing bilateral incarcerated inguinal hernias. He was admitted to the surgical department for additional investigations. The blood test analysis showed white blood cell count (WBC) = 4800 g/dL, Hemoglobin (Hb) = 11.3 g/dL and platelets = 163000/mm^3. Therefore, the surgical team prepared an open surgical intervention with the diagnosis of bilateral inguinal hernia, the Lichtenstein procedure. Bilateral incisions were performed on both inguinal areas. The fascia of the external oblique muscle and the external inguinal rings were opened bilaterally. Direct and indirect hernias were found in the right inguinal canal, and an indirect hernia was found in the left inguinal canal, as can be seen in the Figures 1-3. All those three herniations were repaired by mesh suturing. A careful bilateral exploration of the femoral areas revealed simultaneous bilateral femoral hernias, as can be seen in Figures 4 and 5. The right femoral herniation included a big sac of preperitoneal omental fat, and the left one included omental fat without any color changing of tissue appearance. After returning the hernias to their original position, they were also repaired by mesh suture, and the incisions were closed. After an uneventful recovery, the patient was transferred to the surgical department and discharged after two days.

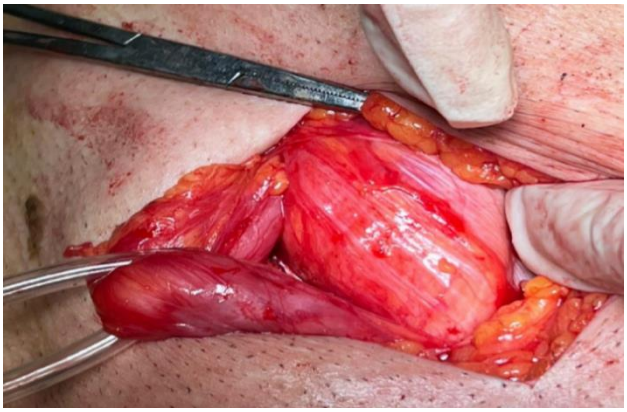

Figure1. Right direct inguinal hernia

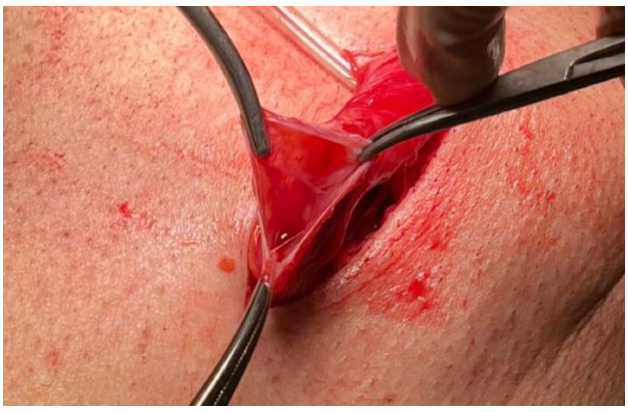

Figure2. The sac of right side indirect inguinal hernia

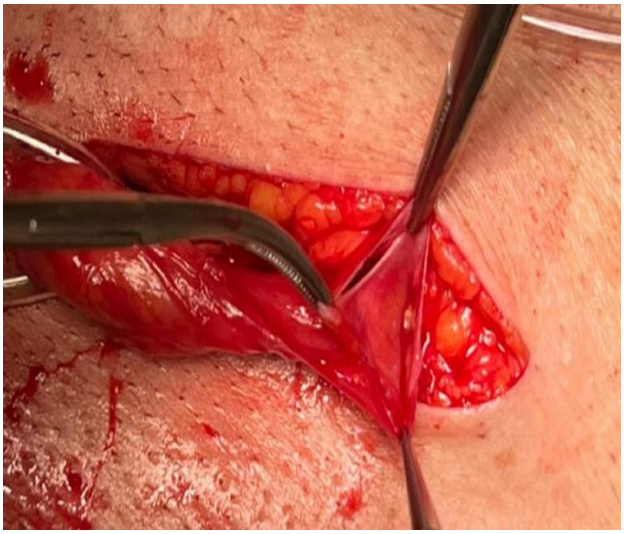

Figure3. The sac of left side indirect inguinal hernia

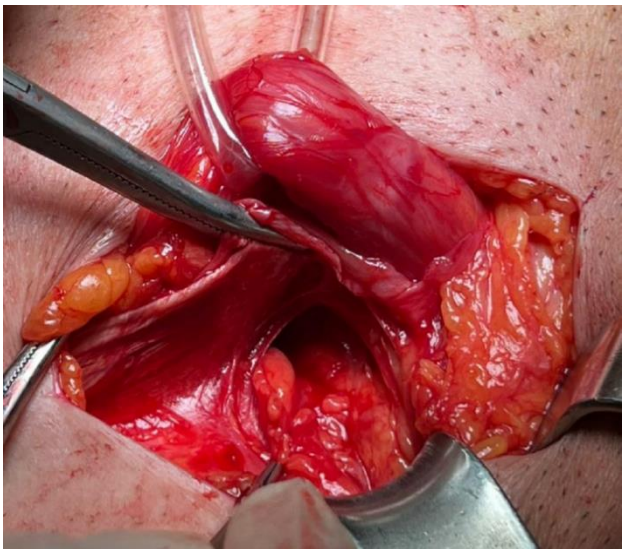

Figure 4. Right side femoral hernia, after replacement and fixation

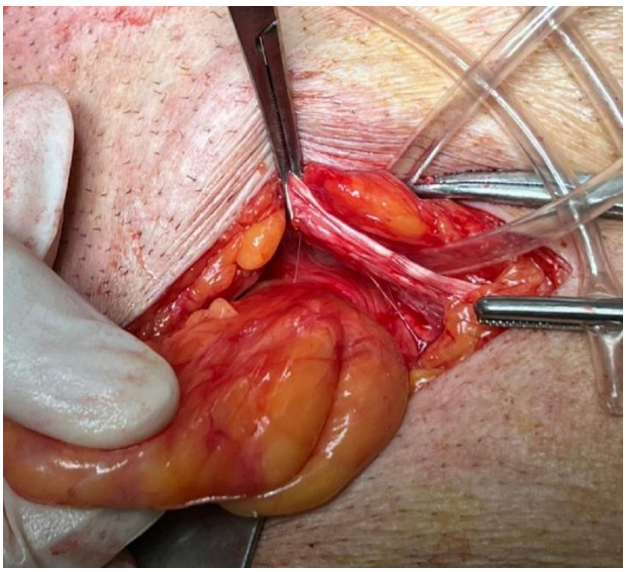

Figure 5. Left side femoral hernia, after replacement and fixation

Discussion

Groin hernia, which means "viscera or adipose tissue protrusions through the inguinal or femoral canal," is one of the most common surgical pathologies that can occur in 27%-43% of men and 3%-6% of women during their lifetime [10,11]. There are different types of inguinal hernia such as direct hernia, indirect hernia, scrotal or giant hernia, femoral hernia, and others classified as rare hernias [12-14]. Direct hernia means the tissue passes through an abdominal wall weakness and is inferior and medial to the deep ring. The indirect hernia is when the tissue passes through the inguinal ring, while the femoral hernia passes below and lateral to the pubic tubercle. Consequently, it stands to reason that inguinal hernias will be seen above and medial to the femoral hernia if they happen simultaneously [9]. Inguinal hernia is more common in men than women, but femoral hernia, which occurs in about 2-4% of adults, is more common in women and occurs three to four times more often than in men. Studies show that the incidence of bilateral inguinal hernia varies from 5% to 22% in different studies [15,16]. On the other hand, only 10% of femoral hernias are found bilaterally [4,5]. Consequently, the incidence of direct and indirect bilateral femoral hernia is very rare and could even lead to a wrong diagnosis, especially when it does not cause symptoms. In addition, because femoral hernia is more associated with complications such as incarceration and strangulation (and the rate of incarceration or strangulation is 44-86%), it may subsequently lead to an increased rate of morbidity and mortality [15,16]. Therefore, it is essential to accurately diagnose and promptly treat this potentially life-threatening condition [2,3].

The diagnostic methods for this condition consist of physical examination and imaging investigations. Inguinal hernia and femoral hernia present with a bulge in the groin area, which disappears temporarily with minimal pressure or when the patient is lying down, if not incarcerated. Although it should be considered that inguinal hernias are typically located above and medial to the pubic tubercle, femoral hernias are typically located below and lateral to the pubic tubercle, so inguinal hernia will appear above and medial to the femoral hernia during the physical examination [17,18].

There are various imaging methods that can be used to diagnose this condition, such as ultrasonography, magnetic resonance imaging (MRI), computed tomography (CT), and herniography [19,20]. The main and most useful imaging method is ultrasonography, but this method is highly dependent on the experience of the examiner [9].

There are risk factors that can increase the likelihood of an inguinal hernia, being divided into two categories: patient-related risk factors and external risk factors [21]. Patient risk factors include male gender, old age, systemic connecting tissue disorders, and low body mass index [21,22]. External risk factors include occupations predisposing to high intra-abdominal pressure as well as smoking, especially for recurrent hernias [23-25].

The definitive method of treatment for symptomatic or complicated hernia is surgical intervention. There are different surgical methods available, and the choice of the best and most useful method depends on many factors, such as the patient's condition, the preferences of the surgical team, and decreasing the likelihood of recurrence. Although many studies have shown that the laparoscopic method has some positive advantages, such as less postoperative pain, fewer postoperative infections, and rapid return to daily activities, the Lichtenstein method has significant features, such as shorter operating time, lower probability of recurrence, lower cost and lower incidence of seroma formation [26-28]. In this case, the surgical team performed an open operation because the anesthesiologist suggested choosing a method with a shorter operative time due to the patient's age.

Conclusions

One of the most common hernias of the abdominal wall is the inguinal hernia, which can present pain and pseudotumoral formation in one of the inguinal areas or even bilaterally. The inguinal hernia has different types (direct, indirect, femoral, etc.), and several types of hernia can appear simultaneously, in adjacent areas or at a distance. The incidence of simultaneous and bilateral inguinal (direct and indirect) and femoral hernias is a very rare condition. Strangulation and incarceration are the most complications of groin hernias, especially in the case of femoral hernia. So, it is essential to diagnose and treat such patients as early as possible, if possible before complications occur. Choosing the best surgical method between various methods depends on different factors. In this case, based on the patient's condition and the surgical team preference, an open operation was performed for the patient in the form of Lichtenstein procedure using mesh.

Highlights

- ✓ Simultaneous and bilateral femoral and inguinal (direct and indirect) hernias predispose to severe complications.
- ✓ Consequently, it is essential to establish an early diagnosis and an adequate treatment.

Authors' contributions

All authors contributed equally to the manuscript and read and approved the final version of the manuscript.

Conflict of interest disclosure

There are no known conflicts of interest in the publication of this article. The manuscript was read and approved by all authors.

Compliance with ethical standards

Any aspect of the work covered in this manuscript has been conducted with the ethical approval of all relevant bodies and that such approvals are acknowledged within the manuscript.

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