

# Simultaneous Bilateral Femoral, Direct, and Indirect Inguinal Hernia in a Single Patient: A Case Report

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## Abstract

Concomitant bilateral direct, indirect, and femoral inguinal hernia is a rare condition that can lead to complications such as incarceration, strangulation, and postoperative recurrence. So, it is important to choose the most useful diagnostic and treatment way.

Simultaneous Bilateral Femoral, Direct, and Indirect Inguinal Hernia in a Single Patient: A Case Report

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Key Clinical words: Concomitant bilateral direct, indirect, and femoral inguinal hernia is a rare condition that can lead to complications such as incarceration, strangulation, and postoperative recurrence. So, it is important to choose the most useful diagnostic and treatment way.

Abstract:

Concomitant bilateral direct, indirect, and femoral inguinal hernia is a rare condition that can lead to complications such as incarceration, strangulation, and postoperative recurrence. So, it is important to choose the most useful diagnostic and treatment way. In this article, a patient with complaint of bilateral pain and bulging of inguinal areas is being presented who was diagnosed with simultaneous bilateral direct, indirect and femoral inguinal hernias during operation.

Keywords: Inguinal hernia, Femoral hernia, Lichtenstein, Ultrasonography

Introduction:

Inguinal hernia is a widespread problem and accounts for 75 % of abdominal wall hernias, with an incidence probability of 27% in men and 3 % in women [1]. On the other hand, the majority of femoral hernia is approximately 2-8% in adults, and it is four times higher in women than in men as the structure of the pelvis is wider in women. Femoral hernia accounts for just 2-4 % of all groin hernias, and 10% of femoral hernias are found bilaterally [2,3]. Inguinal hernias are more common than femoral hernias, but femoral hernia is more associated with complications such as incarceration and can lead to significant mortality and morbidity [4]. More than three simultaneous bilateral inguinal and femoral hernia is a very rare condition [5]. The main treatment way is surgery. Choosing between different surgical methods depends on various things, such as the surgical team preference and patient's condition, leading to selecting the best and most useful way [1]. The main imaging method to diagnose this problem is ultrasonography, but it is highly dependent on operator experiences [6]. In this article, an old male presented with bilateral groin bulging and pain with a diagnosis of bilateral inguinal herniation, which was diagnosed with simultaneous bilateral direct and indirect inguinal hernias and bilateral femoral hernias during operation.

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 did not have any underlying disease. He claimed that the pain started suddenly from the past five days. He mentioned that the pain was moderate at first but increased gradually, and it became unbearable when he presented to the hospital. He did not have nausea, vomiting, urinary incontinence or frequency, and fever. The pain had nothing to do with painkillers. He also mentioned that he had normal defecation and gas passing. During the physical examination, moderate to severe tenderness was detected in both inguinal areas with a right-side predominance without erythema. Another bilateral bulging was detected above and medial previous hernias during the Valsalva maneuver. All vital signs were in the normal range. He was asked to do abdominal and inguinal sonography. The results revealed incarcerated bilateral inguinal hernias. He was admitted to the surgical ward for more investigations. The blood test analysis showed white blood cell count (WBC) = 4800 g/dL, Hemoglobin (Hb) = 11.3 g/dL and platelet = 163000. So, the surgical team prepared an open surgery with the diagnosis of bilateral inguinal herniation in Lichtenstein way. Bilateral incisions were performed on both inguinal areas. The fascia, external oblique muscle, and external rings were opened bilaterally. Direct and indirect herniations were seen in the right inguinal canal, and an indirect herniation was seen in the left inguinal canal, as can be seen in Figures 1 and 2, and 3. All those three herniations were repaired by mesh suturing. More bilateral exploration in femoral areas revealed simultaneous bilateral femoral herniations, 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 in the tissue appearance. After returning the hernias to their original position, they were repaired by mesh suturing too. The incisions were closed.

After an uneventful recovery, the patient was transferred to the surgical ward and discharged after two days.

#### 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 [7]. There are different types of inguinal hernia such as direct hernia, indirect hernia, scrotal or giant hernia, femoral hernia, and others called rare hernia [8]. Direct hernia means the tissue passes through an abdominal wall weakness and is inferior and medial to the deep ring. Indirect hernia, which means the tissue passes through the inguinal ring, and the femoral hernia, which passes below and lateral to the pubic tubercle. Consequently, it is understandable that inguinal hernias will be seen above and medial to the femoral hernia if they happen simultaneously [6]. Inguinal hernia is more common in men than women, but femoral hernia, which occurs approximately 2-4% in adults, is more common in women and occurs three to four times more than men. Studies show that the prevalence incidence of bilateral inguinal hernia varies from 5% to 22% in different studies [9,10]. On the other hand, just 10 % of femoral hernias are found bilaterally [2,3]. Consequently, the incidence of bilateral direct and indirect and femoral hernia is very rare and could lead to misdiagnosis as it can cause no symptoms. Furthermore, as the femoral hernia is more associated with complications such as incarceration and strangulation, and the incarceration or strangulation rate is 44-86%, it can subsequently lead to more mortality and morbidity [9,10]. So, it is crucial to diagnose and treat this life-threatening condition accurately and immediately [3].

The main diagnostic way for this condition is findings during the physical examination and imaging methods. Inguinal hernia and femoral hernia present with a bulging in the groin area that disappears temporarily with minimal pressure or when the patient is lying down. 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 physical examination [1,6].

There are different types of imaging methods that can be used to diagnose this condition as a helpful method, such as ultrasonography, magnetic resonance imaging (MRI), computed tomography (CT) scan, and herniography [11]. The main and the most useful imaging method is ultrasonography, but this method highly depends on operator experiences [6].

Some risk factors can increase the occurrence probability of groin hernia divided into two general categories: patients' risk factors and external risk factors [12]. Patient risk factors include male gender, old age, systemic connecting tissue disorders, and low body mass index [12,13]. External risk factors include high intra-abdominal pressure and smoking, especially for recurrent hernias [12,14].

The definitive treatment method for symptomatic hernia is surgery. There are different methods of surgery available that choosing the best and the most useful method depends on many factors such as patient's condition, surgical team preferences, and recurrences probability. Although many studies showed the laparoscopic method has some positive advantages like lower postoperative pain, fewer wound infections, and quick return to daily activities, the Lichtenstein method has significant features such as shorter operation time, fewer recurrences probability, lower cost, and lower incidence of seroma formation [15]. In this case, the surgical team performed an open operation as the anesthesiologist advised to choose a method with lower operation time because of the patient's age.

#### Conclusion:

One of the most common abdominal wall hernias is an inguinal hernia that can present with pain and bulging in groin areas. The inguinal hernia has different types: direct, indirect, femoral, etc. They could appear just on one side or occur bilaterally. The prevalence incidence of simultaneous bilateral direct, indirect and femoral hernia is a very rare condition. Strangulation and incarceration are the most complications of groin hernias, especially femoral hernia. So, it is crucial to diagnose and treat this condition most effectively. 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 in the Lichtenstein way for the patient, and the hernias were repaired by mesh.

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