

Bilateral Lumbar Hernia: A Case Report

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Furkan Karahan¹, Ahmet Atasever², Arif Atay³, Osman Nuri Dilek³

¹Department of General Surgery, Erciş Şehit Rıdvan Cevik State Hospital, 65400 Van, Türkiye

²Department of General Surgery, Demiroğlu Bilim University Florence Nightingale Hospital, 34349 İstanbul, Türkiye

³Department of General Surgery, İzmir Katip Celebi University Atatürk Training and Research Hospital, 35360 İzmir, Türkiye

Lumbar hernias are a relatively uncommon occurrence, with two main categories: congenital and acquired. Some acquired hernias are spontaneous, while others are the result of secondary factors such as trauma and surgery. Bilateral primary lumbar hernia is a much rarer occurrence. Abdominal computed tomography is the gold standard for differential diagnosis of bilateral primary lumbar hernia. The treatment plan entails the closure of the defect through either open or laparoscopic methods, accompanied by the use of a suitable mesh to provide support. Nevertheless, no surgical method has yet been identified as the standard procedure for reducing the risk of relapse. We present the case of a 73-year-old female patient who presented with complaints of swelling in the left lumbar region and abdominal pain. The patient exhibited bilateral lumbar hernia. The hernial sac on the left side contained intra-abdominal organs. The diagnosis was confirmed by computed tomography. The defect on the left was subsequently closed with mesh following the dissection of the hernia sac. In this study, we present a case of bilateral lumbar hernia in the context of existing literature. The objective of this study was to assist clinicians in accurately diagnosing and appropriately managing this condition.

Keywords: hernia; lumbar; Grynfelt; Petit; treatment

Introduction

Anatomically, lateral abdominal wall hernias are defined as hernias of the lumbar region. Four distinct types of hernia defects have been identified to date: flank (lateral to the rectus sheath), iliac, lumbar (posterolateral), and subcostal lesions [1]. While traumatic or surgical factors are the most common causes, these hernias can also be congenital or idiopathic. The precise incidence and prevalence of lumbar hernias remain unknown. Nevertheless, approximately 80% of lumbar hernias are the result of spontaneous (primary) or secondary events. Incisional hernias represent the most common type of lumbar hernia. Traumatic hernias are relatively uncommon [2]. The remainder may be congenital and caused by impairments in the development of muscle aponeurosis [3]. The lumbar region is encircled by the 12th costa edge at the superior aspect, the iliac crest at the inferior aspect, the erector spinae muscle in the posterior aspect (medial), and the external oblique muscle in the anterior aspect (lateral). Lumbar hernias are a rare defect that involves the extrusion of retroperitoneal fat or viscera through a weakness in the posterolateral abdominal wall. The region in question is characterized by the presence of two anatomically defined weaker triangles, namely the triangle of Petit and the triangle of Grynfelt-Lesshaf. The Grynfelt hernia arises from the superior lumbar triangle, while the Petit hernia arises from the inferior lumbar triangle [3] (Fig. 1).

Patients with such hernias may be asymptomatic or present with life-threatening complications such as strangulation. The low number of patients with posterolateral abdominal wall defects described in the literature and the small number of cases encountered by surgeons present challenges in diagnosis and treatment [4]. As observed in all abdominal wall hernias, the predisposing factors include conditions that increase intra-abdominal pressure, such as pregnancy, obesity, ascites, or chronic bronchitis; weakness of the abdominal wall; and muscle atrophy caused by aging.

The present study reports a case of idiopathic bilateral lumbar hernia and describes the diagnosis and treatment of this condition in the light of the existing literature. Consequently, the objective was to assist clinicians in the diagnosis and treatment of this rare condition.

Case Presentation

A 73-year-old female patient presented with complaints of abdominal distension, discomfort in the left lumbar region, and difficulty in defecation. She was a housewife and her body mass index was 32. She did not have any chronic disease in her history. There was no previous abdominal surgery. The patient's examination revealed the presence of a large hernia sac that exhibited a characteristic response to

Correspondence to: Furkan Karahan, Department of General Surgery, Erciş Şehit Rıdvan Cevik State Hospital, 65400 Van, Türkiye (e-mail: furkantosan@gmail.com).

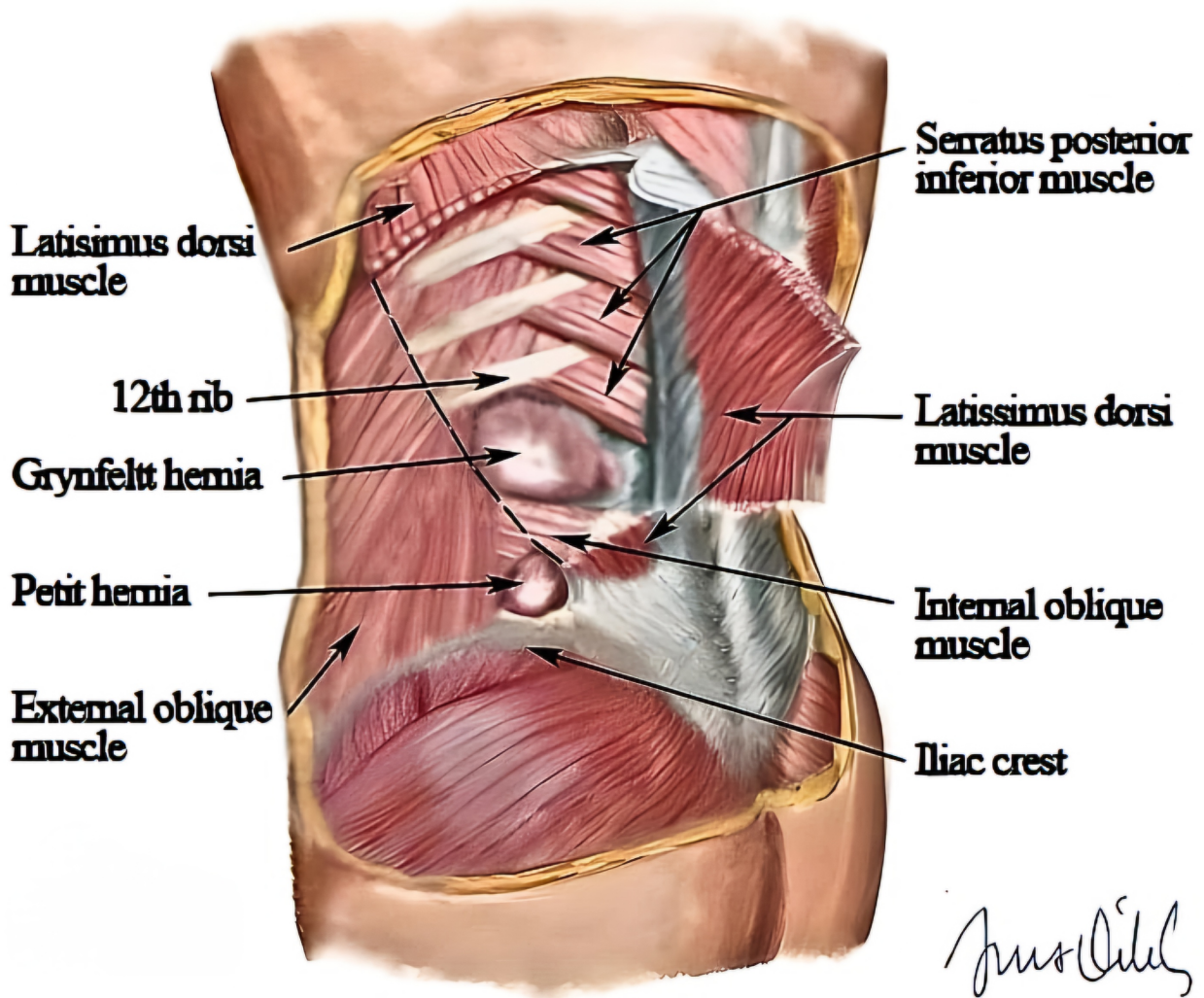


Fig. 1. This picture shows the anatomical reference points of the Lumbar hernia region. (This picture was created by the author ON Dilek, inspired by anonymous internet resources.)

the Valsalva maneuver, exhibiting both growth and shrinkage. A computed tomography scan revealed a 15×20 cm hernia defect located subcostally on the left side of the abdomen. A 4×7 cm hernia defect was also identified on the right side of the abdomen, with the front side being covered by the liver (Fig. 2). The patient exhibited no symptoms on the right side, whereas the lumbar hernia on the left side was symptomatic. The patient underwent laparoscopic surgery. Laparoscopic imaging demonstrated that the hernial sac on the left side extended to the colon and small intestines and extended to the back. The sac on the right side was notably smaller and devoid of contents, given that the liver was situated in front of it (Fig. 2). The hernial sac was successfully freed using laparoscopic instruments. However, due to a lack of technical instruments, the abdomen was entered via a left subcostal incision. A 25×20 cm composite mesh, prepared and fixed with Polypropylene Suture from the edges, was then placed on the defect.

The defect on the right side was asymptomatic and uncomplicated. Consequently, no intervention was undertaken. Nevertheless, the patient experienced a relapse one year after surgery. The patient exhibited a gain in body weight of up to 20 kg, accompanied by dyspnea during this period. It was observed that the mesh placed on the defect on the left side had protruded outward. The patient was instructed to lose weight, and following a 10-kilogram reduction in body mass, an open surgical procedure was conducted for hernia repair and mesh reinforcement. No surgical procedure was conducted on the right side. Subsequently, the patient was instructed to lose additional weight, and no complications have been reported for a period of three months.

Discussion

Abdominal wall hernias represent a significant concern for surgeons engaged in abdominal surgery. The available literature and surgical experience on posterolateral wall her-

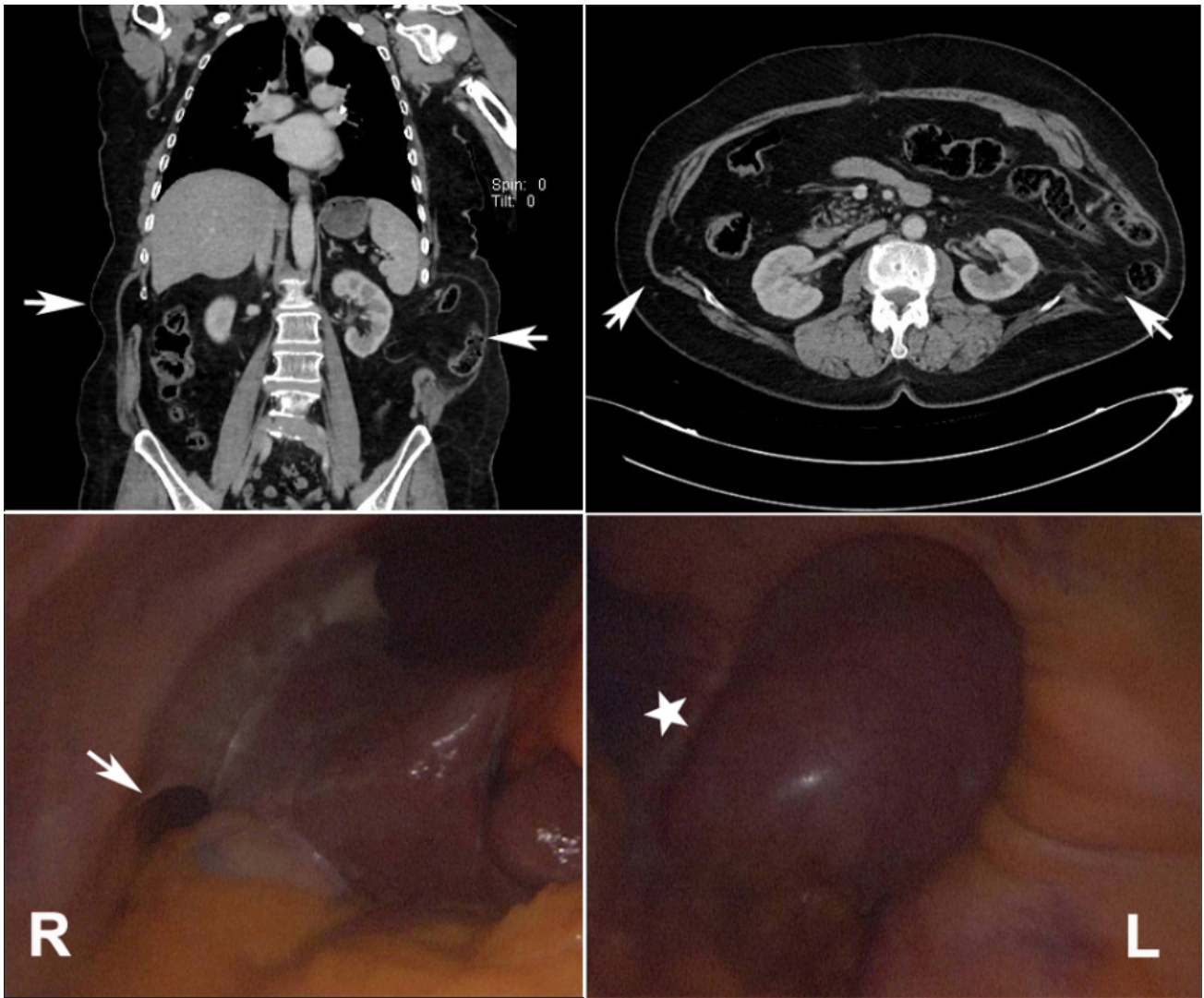


Fig. 2. Computed tomography and intraoperative images of hernia defects. Abdominal computed tomography of axial and coronal sections (top row) showing bilateral hernias (arrows) that are large on the left side and extended until the 12th costa at the bottom and small on the right side. Laparoscopy imaging (bottom row) showing hernia defects on the right side (star) (R) and left side (arrow) (L).

nia is limited, given that the majority of abdominal wall hernias occur in the inguinal area and anterior abdominal wall. The lumbar hernia was first described by Barbet in the late 17th century, and approximately 300 cases were reported in the literature until 2007 [5]. It is estimated that a surgeon may encounter only one case during their entire career and perform the necessary surgical procedures accordingly [4]. Moreover, the number of bilateral lumbar hernia cases reported is even lower than that of other hernia types.

The first documented case of bilateral lumbar hernia was reported by Garangeot in 1731[6]. In the cadaver study by Loukas *et al.* [7], hernias arising from the Grynfelt's triangle were wider (5–15 cm), whereas those arising from the Petit's triangle were more common. The majority of lumbar hernias develop spontaneously, while 20% are congenital and 25% occur as a result of trauma or surgical interven-

tion [8]. In the present study, a 15 × 20 cm spontaneous hernia defect was identified in the Grynfelt's triangle.

The majority of spontaneous lumbar hernias are associated with a number of predisposing factors, including advanced age, obstructive pulmonary disease, muscle atrophy, and excess weight [5]. The most significant risk factor for lumbar hernias is elevated intra-abdominal pressure. Other risk factors include the use of muscle flaps for breast reconstruction and rapid weight loss, which can result in damage to the 12th neurovascular bundle orifice [5].

Primary bilateral lumbar hernia is a rare occurrence in clinical settings. The case of lumbar hernia described in the present study is an infrequent entity due to its idiopathic, spontaneous, and bilateral nature. The patient was of advanced age and had a predisposing factor in the form of excess weight. The patient continued to gain weight until the relapse was detected.

Lumbar hernias are frequently asymptomatic. The most common manifestation is a palpable posterolateral mass, which increases in size with cough and exertion. In the present study, the patient presented with complaints regarding the lesion on the left side, but no complaints regarding the defect on the right side, as it was blocked by the liver. Hernias may be reduced or even disappear when the patient is in the decubitus position.

It should be noted that during a physical examination, hernias may not always be palpated. The presence of subcutaneous adipose tissue and the relatively small size of the hernia may result in a false-negative examination result. Computed tomography can reveal impaired muscle layers, hernia sac content, hernia size, and accompanying hernias. Computed tomography revealed that the defect on the left side was approximately 15 × 20 cm in diameter and that the intestinal contents were located in the hernial sac. In the differential diagnosis, lipomas, retroperitoneal tumors, and soft tissue masses should be considered.

Surgical treatment can be performed using either an open or minimally invasive approach, which may include laparoscopic or robotic methods. Small facial defects can be repaired laparoscopically with intraperitoneal mesh, whereas preperitoneal/retro muscular mesh placement is preferable for larger hernias. In patients with a large hernia (>15 cm), loss of domain thin atrophic skin, or large dystrophic scars, Beffa *et al.* [1] preferred an open technique. In patients with smaller hernias and a high risk of wound complications (e.g., obese patients, smokers, patients with uncontrolled diabetes), a laparoscopic or robotic approach can be employed [1]. Prior to the placement of the mesh, it is essential to liberate the preperitoneal plane by a minimum of 5 cm in the direction of the psoas muscle, iliac crest, inferior aspect of the subcostal margin, and in the trajectory of the rectus muscle [1]. In the present study, laparoscopic surgery was initiated; however, it was ultimately switched to open surgery due to the considerable size of the defect and the lack of appropriate technical instruments.

Lumbar hernias are frequently overlooked due to their infrequent occurrence. Therefore, it is of the utmost importance to perform a differential diagnosis. There is no optimal surgical approach to repair lumbar hernias. The identification and subsequent elimination of risk factors will enhance the diagnostic success rate. The establishment of an accurate understanding of the anatomy is essential for determining the most appropriate treatment. In light of the surgeon's experience, the course of treatment can be tailored to the individual patient's needs. Satisfactory results can be achieved by open method repair for large defects and by laparoscopic approach for small hernias.

In this case, we favored laparoscopic surgery for the patient's bilateral hernia. This approach afforded the opportunity to more closely examine the peritoneal defects on the right and left. Upon returning to open surgery, we were able to more effectively reveal the hernia defect and intact fascia

sides. Given the weakness of the area layers, a wide mesh was used for repair, in accordance with other studies.

A comprehensive understanding of lumbar hernias is essential for surgeons to accurately diagnose and treat patients. Moreover, these and analogous studies will serve to standardize the treatment approach in the future.

Conclusions

Bilateral lumbar hernia is a rare condition. In the event of clinical findings, computed tomography is the optimal diagnostic option. Treatment may be conducted via open or laparoscopic techniques. In some cases, the use of mesh may be preferred for the purpose of enhancing the security of closure. In selected cases of asymptomatic patients, follow-up is a safe and appropriate course of action.

Availability of Data and Materials

The data used to support the findings of this study are included within the case report, and during the present study are available from the corresponding author on reasonable request.

Author Contributions

FK, AAtasever: Concept, design; AAtay, OND: Acquisition of data. FK, OND: Drafting of the article; AAtasever, OND, AAtay: Critical revision for important intellectual content. All authors read and approved the final manuscript. All authors have participated sufficiently in the work and agreed to be accountable for all aspects of the work.

Ethics Approval and Consent to Participate

This study was waived for ethical approval by the ethics committee of Izmir Katip Celebi University. This study was conducted in accordance with the ethical standards set forth in the 1964 Declaration of Helsinki. Written consent was obtained from the patients for the study.

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Conflict of Interest

The authors declare no conflict of interest.

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