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Clinical and Surgical Anatomy of Lumbar Hernia

REVIEW

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Abstract

Lumbar hernia is defined as the presence of failure in the transverse fascia or in the aponeurosis of the transverse abdominal muscle that results in the extrusion of intra or extra peritoneal organs through the discontinuity of the postero lateral abdominal wall. The aim of this study was to conduct a methodical review of the anatomy of the hernia form grynfelt dated from 1985 to 2016. For this, we performed a bibliographic review through electronic databases like SciELO, PubMed, Science Direct, LILACS and Bireme to get better approach to the subject. It has been found that the lumbar hernia is a disease little known by doctors whose diagnostics are often performed in the wrong way and for surgical correction needs a good anatomical knowledge. Lumbar hernias, although rare, must be taken into account, since ischemia of herniated intestinal segments can lead to the death of the patient, especially in the elderly. Knowledge about the anatomy of the lumbar region is of vital importance because it makes surgery safe and reduces risks of complications and recidivating of the hernia.

Keywords
Anatomy; Hernia; Surgery; Medicine; Morphology.

Introduction

Acquired lumbar (HLA) or primary hernias arise in physiologically fragile anatomical regions of the posterior abdominal wall (PAP) [1, 2] Such regions are identified as upper lumbar triangle or of Grynfelt-Lesshaft

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and lower lumbar triangle or of Jean Louis Petit, both present in the body antimeres [2, 3]. Other non-specific regions for the appearance of HLAs are surgical or post-traumatic scars that, for some reason, have resulted in points of extreme fragility of PAP [4, 5].

In the median plane and in its superior quadrants the PAP has bony reinforcement of the lower ribs and the lumbar spine [10]. In the right and left flank region, PAP is formed mainly by the oblique muscles, external and internal, transverse abdominis muscle, tendinous fasciae and adipose tissue [10]. The muscular and connective structures that confer resistance to this region have well defined and distinct forms, due to this, not all PAP layers are present in their full extent, having regions less thick than others [9, 10]. In addition, in these regions there are gaps in the abdominal wall that give passage to the posterior branches of the lumbar nerves and blood vessels [2]. These added factors give rise to regions of PAP fragility susceptible to the appearance of herniations [1, 2, 10].

The superior lumbar triangle or Grynfelt-Lesshaft is a region of posterolateral fragility delimited superiorly by the lower border of the 12th rib and by the posterior serratus muscle, laterally by the internal oblique muscle and medially by the quadratus lumbar muscle [1, 2, 4, 6]. Superficially, this region is covered by the great dorsi muscle and its floor is formed by the aponeurosis of the transverse abdominis muscle [1, 4, 6, 10].

The lower lumbar triangle or of JL Petit is also a region of posterolateral fragility, its superolateral limit is formed by the external oblique muscle, the superomedial limit is composed by the great dorsi muscle and the lower limit is formed by the iliac crest [1, 4, 6, 10]. The floor of this region is composed by the superficial face of internal oblique muscle and is superficially covered by the fatty layers and skin [1, 3, 6, 10].

There are also PAP hernias with nonspecific or diffuse localization, these can be caused by surgical incisions, traumas or congenital [5,9]. Incisional hernias may result from postoperative closure defects of the abdominal aponeuroses, non-parallel surgical approaches to the direction of the abdominal muscular fibers or denervation of the abdominal muscles by iatrogenic section of the nerves, similar situations also explain the emergence of traumatic PAP hernias [5, 7]. These alterations in the abdominal wall structure compromise the biomechanical balance, resulting in fragility points susceptible to herniations [5, 7].

Congenital hernias are associated with spinal malformations and, consequently, defects in the fixations of the paravertebral musculature, unconfigured the normal anatomy of the PAP, causing this type of lumbar hernia [8, 9, 10].

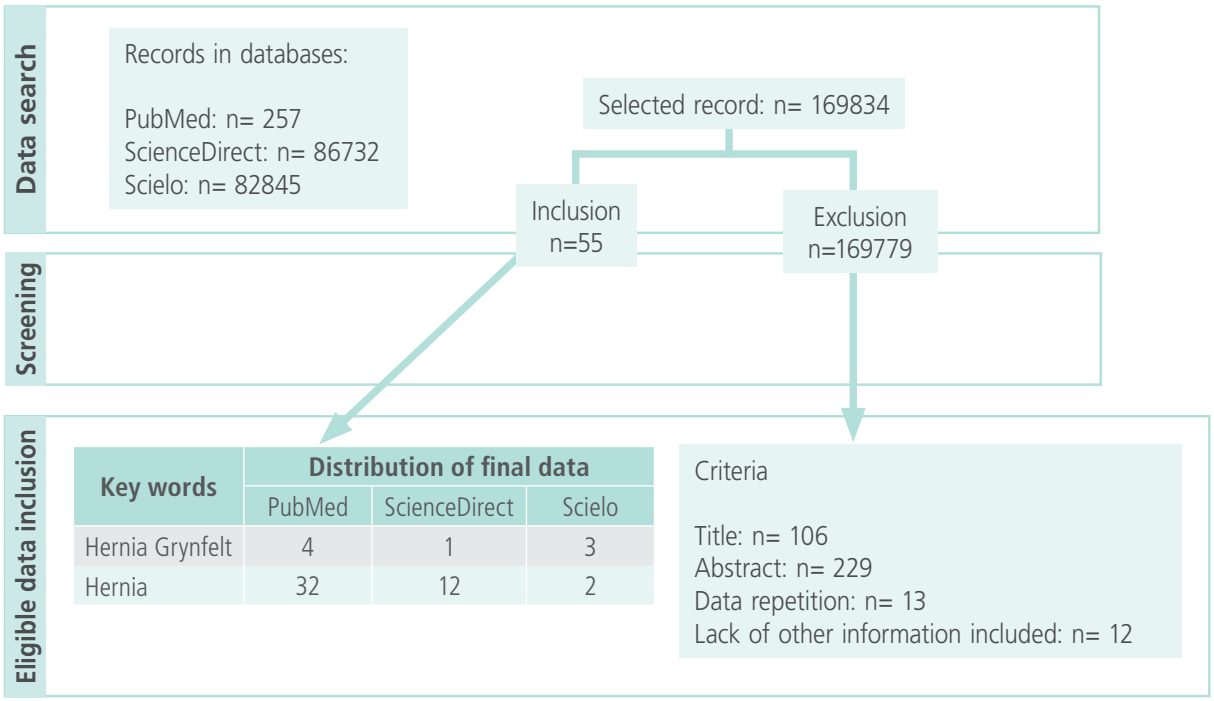
The Grynfelt hernia presents low prevalence, however its negative consequences for the affected individuals are considerable. In addition, in the literature there are few studies demonstrating the anatomical aspects of this disease of surgical importance. Thus, the present article aimed to perform a systematic review study based on a survey on the main themes of cases of Grynfelt's Hernia published in the period from 1985 to 2016.

Methods

This article presents a bibliographic review study based on the analysis of scientific articles published between 1985 and 2016 in the PubMed, Science Direct and Bireme databases, using as search terms: hernia Grynfelt's and anatomy. The terminologies used Are in agreement with the system of Descriptors in Health Sciences (DHS).

The search for articles carried out in the period from January to August 2017, through the periodicals on the Internet. Subsequently, the materials were selected using the following inclusion criteria: theme approach; Publication date from 1985 to 2016; Article available in full and/or summary and study in humans. The representation of the articles

Figure 1: Flow diagram for inclusion/deletion and data processing.



found in number of included and excluded, as well as their applied distribution is shown in **Figure 1**.

Results

In the present study, based on bibliographic searches about Lumbar Hernia in the already cited databases, we found a total of 54 cases reports from 51 articles in the period between 1985 and 2016.

The lumbar hernias was more common in male (50.9%) than it was in female patients (49.1%). About the congenital hernias, we found more female cases (60%), and the non traumatic, noniatrogenic hernias were more common in men (70.83%). In traumatic caused hernias, the female patients were the most (60%) as they were the most in iatrogenic hernias (76.92%).

Besides that, the most recurrent cause of this type of herniation was non traumatic, no iatrogenic (44.4%), followed by iatrogenic hernias (25.92%) and traumatic hernia (18.51%). The congenital hernias present 12.96% of cases.

In Lumbar Hernias, the most common herniating structure is retroperitoneal fat (11.1%). Other structures that could herniate are descendent colon (9.52%) and kidney (9.52%), followed by right colon (7.93%) and small bowel (7.93%). However, the amount of articles that do not disclose the herniated structure is significant (14.28%).

Furthermore, hernias were more constants on left side (48.07%) than on right side (17.03%). Herniations on the left side are almost three times more common than those on the right side. Besides that, about the type of lumbar hernia, the superior lumbar triangle herniation (Grynfellt's herniation)- 34.61% -is 1.38 times more often than the inferior lumbar triangle herniation (Petit's herniation)- 25%.

About the types of treatment, Laparotomy (62.96%) was the most common way to repair lumbar hernia, and Laparoscopic surgeries was performed in 27.77% of cases. In addition to that, there was one case (1.85%) that the patient refused to be operated [40] and another patient was hospitalized [15]

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Table 1. Review articles on lumbar hernia.

Author	Year	R	Type of study	Genre	Age	Herniation cause	Structure herniated	Type of lumbar hernia	Treatment	Postoperative
Puttini	2003	2	Case report	Male	60	Not specified.	Incarcerated descendent colon (No signs of strangulation associated to intestinal obstruction and cecal perfuration.	Left upper lumbar triangle.	Laparotomy	The patient progressed uneventfully, being discharged on the 7th postoperative day.
Ahmed	2014	12	Case report	Female	45	It was a case of primary acquired lumbar hernia in the superior lumbar triangle.	Retroperitoneal fat	It was on the right side in the superior lumbar triangle of Grynfeltt-lesshaft	Laparotomy	The patient has been asymptomatic. There has been no recurrence in the past 6 months since the operation.
Akçora	2008	14	Case report	Male	18 Months	Congenital.	Spleen, omentum, and the splenic flexure of the colon.	Left side.	Laparotomy	Uneventfully.
Alfisher	1995	15	Case report	Male	73	Not specified.	Multiple areas of metastasis to the liver and a normal remaining right kidney, with a spleen herniation.	Left lumbar hemia.	None. Hospitalization	She was discharged to home on day 8.The patient continues to do well at her 1-year follow-up.
André	2008	16	Case report	Male	59	Traumatism (car accident).	Not specified.	Left side, but the triangle was not specified.	Laparotomy	Uneventfully.
Astarcıoğlu	2003	17	Case report	Female	70	Not specified.	Incarcerated descending colonic segment with complete obstruction in inferior lumbar triangle.	Inferior lumbar triangle.	Laparotomy & Hernioplastic	The postoperative period was uneventful, and the patient was discharged on postoperative day seven. No recurrence was observed in 2 year's follow-up.
Balkan	1999	18	Case report	Female	40	Wearing a seat belt in a traffic accident.	Some part of the descending colon without obstructing bowel passage with a jejunal displaced.	The peritoneal continuance on the left lumbar region had disappeared, a retroperitoneal hematoma had formed, and a lumbar hernia had developed in this area.	Laparotomy	The patient was discharged with a functional end colostomy and no complaints on the eighth postoperative day
Belekar	2014	19	Case report	Male	68	Not specified.	Not specified.	Left superior lumbar triangle.	Laparotomy & Hernioplastic	At follow-up, the patient is asymptomatic and under treatment for pulmonary disease.

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Author	Year	R	Type of study	Genre	Age	Herniation cause	Structure herniated	Type of lumbar hernia	Treatment	Postoperative
Beltrán	2014	20	Case report	Female	72	Complication of a total hip arthroplasty replacement prothesis.	Sigmoid colon incarcereted and being comprising.	Left side, but the triangle wasn't specified.	Laparotomy, But Failed	Patient died twelve hours later.
Biance	2006	21	Case report (case 1)	Male	45	Traumatism.	Sigmoide colon.	Left inferior lumbar triangle.	Laparoscopic & Hernioplastic	Uneventfully.
Biance	2006	21	Case report (case 2)	Female	58	Traumatism.		Left inferior lumbar triangle.	Laparoscopic & Hernioplastic	At one month, the patient presented an occlusion intestinal tract of the hail of mechanical appearance, secondary to a flange developed at the expense of an epiploic fringe, imposing a viscerolysis. The suites were favorable thereafter.
Bickel	1997	22	Case report	Female	60	Not specified.	Peritoneal fat.	Defect of the aponeurosis of the transverse abdominis muscle.	Laparoscopic & Hernioplastic	The postoperative sequelae were uneventful, and she was discharged asymptomatic on the 3rd postoperative day.During 8 months of follow-up, neither recurrence of hernia.
Burick	1996	23	Case report	Male	52	Driver of tractor trailer, which rolled over several times.	Herniation of bowel and peritoneal fat.	Lateral abdominal wall defect of the left side.	Laparoscopic & Hernioplastic	The patient was discharged to home on the morning of postoperative second day
Burt	2004	24	Case report and literature review (case 1)	Female	45	Jumped from a three-story roof.	Partial herniation of the right colon.	Hernia involving the right internal and external oblique muscles and quadratus lumborum.	Laparotomy & Hernioplastic	The pacient was discharged home 2 days later.
Burt	2004	24	Case report and literature review (case 2)	Male	32	Belted passenger involved in a high-speed motor vehicle collision, and with devascularization and a subcapsular hematoma of the spleen 5 months before .	No-t specified.	Incisional left lumbar hernia.	Laparotomy, Hernioplastic & Lumbotomy	6 months later with a recurrence and underwent staged repair of each with preperitoneal knitted polyester mesh.
Castelein	1985	25	Case report	Female	60	Iliac bone graft defect.	Not specified.	Inferior lumbar triangle. (Side not specified).	Laparotomy & Hernioplastic	Not specified.

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Author	Year	R	Type of study	Genre	Age	Herniation cause	Structure herniated	Type of lumbar hernia	Treatment	Postoperative
Cesar	2012	26	Case report and a literature review	Male	50	Not specified.	Retroperitoneal fat.	Herniation between the erector spinae muscle group and internal oblique muscles through aponeurosis of the transversalis muscle (Grynfeltt hernia).	Laparotomy, Lumbotomy & Hernioplastic	The patient was discharged the next day, Two months postoperatively, the patient was asymptomatic
Fokou	2014	27	Case report and a literature review	Male	62	Not specified.	A loop of small bowel.	Left lumbar triangle of Petit.	Laparotomy	The patient was discharged without any complication on the thirteen postoperative day. As of date more than 2 years after the operation, the patient is doing well.
Fraser	2013	28	Case report	Female	63	Breast conservation surgery.	Small bowel and right colon.	Right inferior lumbar triangle.	Laparotomy & Hernioplastic	Postoperative was uneventfully. Comenced on adjuvant hormonal and herceptin therapy
Frueh	2014	29	Case report	Female	66	Spinal fusion of the thoracolumbar transition with bone graft from the left iliac crest due to vertebral body fracture.	Diverticulitis of the sigmoid colon with free perforation, herniating partially in a left lumbar hernia.	Left Petit's hernia.	Laparoscopic.	The patient was discharged on the eighth postoperative day.Clinical follow-up appointments were performed after three and 14 months, without any signs of hernia recurrence.
Habib	2003	30	Case report	Male	65	Not specified.	Retroperitoneal fat.	Right superior lumbar triangle and identified the 12th rib and the lumbar wall defect.	Laparoscopic & Hernioplastic	The patient was pain-free on second postoperative day when he was discharged. A subcutaneous seroma in the lumbar wall that needed needle suction was diagnosed on twelve postoperative day. There is no recurrence of the lumbar hernia 2 years after this retroperitoneoscopic tension-free repair.
Hancock	1988	31	Case report	Female	3 Months	Congenital.	Not specified.	Left inferior lumbar triangle.	Laparotomy	7 months of age she presented with recurrence lumbar herniar and on this occasion repair was carried out with the use of a Marlex mesh prosthesis. After that, the recovery was uneventfully.

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Author	Year	R	Type of study	Genre	Age	Herniation cause	Structure herniated	Type of lumbar hernia	Treatment	Postoperative
KapooR	2014	32	Case report	Not specified	40 hours old	Congenital.	Bowel loops.	Left superior lumbar triangle.	Laparotomy & Hernioplastic	Uneventfully. The patient was discharged 5 days after the surgery.
Karmani	2002	33	Case report	Male	Full-term 3.1-kg Nigerian	Congenital.	On the left side:not specified/ On the right side: kidney.	Bilateral lumbar hernias of the inferior lumbar triangle.	Laparotomy & Hernioplastic	The patient was discharged on day 3. Follow-up in out-patients at 1 month showed no evidence of recurrence
Kawashita	2010	34	Case report	Female	75	Right iliac bone harvest for orthopedic surgery of the knee joint.	Ascending colon.	Right inferior lumbar area.	Laparoscopic, Lumbotomy & Hernioplastic	The patient was discharged on the seventh postoperative day. A CT-scan 2 years after surgery showed no evidence of recurrence of the hernia
Lawdahl	1986	35	Case report	Male	78	Not specified.	Right retroperitoneal fat and Gerota's fascia.	Right inferior lumbar triangle.	Did not receveid treatment.	Not specified.
Lazier	2016	36	Case report	Female	7 months of age	Congenital lumbar hernia.	Herniation of the colon and kidneys, with Morgagni hernia and central core disease.	The lumbar defects on both sides involved the entire region between the inferior ribs and iliac crest.	Laparotomy	The post-operative course was complicated by fever, tachycardia, hypotension and metabolic acidosis, initially attributed to septic shock
Lichtenstein	1986	37	Case report	Male	54	Not specified.	Not specified.	Large diffuse bilateral lumbar hernias.	Laparotomy	Uneventfully.
Lim	2011	38	Case report	Female	76	Not specified.	Retroperitoneal fat and descending colon through the fascial defect at the left superior lumbar triangle.	Left superior lumbar hernia, Grynfeltt hernia.	Laparoscopic & Hernioplastic	She was discharged on the 5th day after the operation and there was no evidence of recurrence on follow up at 11 months.
Lowell	1986	39	Case report	Female	Newborn (age not specified	Surgery of meningomyelocele.	Not specified.	Left superior lumbar triangle.	Laparotomy & Hernioplastic	Uneventfully.
Luo	2016	40	Case report	Female	76	Not specified.	Bilateral lumbar hernia between the erector spinae muscle group and the internal oblique muscles through the aponeurosis of the transversalis muscle, with right intertrochanteric femoral fracture.	Left flank.	Not specified	The patient was discharged from the hospital five days after the orthopedic surgery.

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Author	Year	R	Type of study	Genre	Age	Herniation cause	Structure herniated	Type of lumbar hernia	Treatment	Postoperative
Meinke	2003	41	Case report	Male	78	Not specified.	Right-sided lumbar hernia with an incarcerated fat and cecum.	Lower lumbar triangle.	Laparoscopic, Lumbotomy & Hernioplastic	The patient was discharged on postoperative day 5 following full. At 1-year follow-up, he is symptom-fee without evidence of recurrent hernia.
Mingolla	2009	42	Case report	Female	40	Probably was caused by an excision of lipoma.	Fatty mass.	Superior lumbar hernia(Grynfelt) side not specified.	Laparotomy & Hernioplastic.	Uneventfully. The patient was discharged at the same day.
Moon	2008	43	Case Report and Novel Approach to Repair	Female	68	Isolated left pelvic wing fracture.	Nonstrangulated loop of small bowel herniating, with right spigelian hernia.	Left pelvic wing defect.	Laparotomy	The patient was discharged on postoperative day 2. Follow-up visits showed no evidence of early recurrence.
Nam	2011	44	Case report	Female	70	Not specified.	Retroperitoneal fat.	Superior lumbar hernia.	Laparoscopic & Hernioplastic	The patient was discharged on postoperative day 5. Four months postoperatively, she had no evidence of recurrence.
Petersen	2013	45	Case report and a literature review	Male	69	Not specified.	Bowel contents.	Left flank.	Not specified	Not specified
Ploneda-Valencia	2016	46	Case report and a literature review	Male	42	Not specified.	Perisplenic fat protruding.	Grynfelt-Lesshaft's hernia.	Laparotomy, Lumbotomy & Hernioplastic	The patient was discharged 24-h after the surgery.
Prieto-Díaz-Chávez	2000	47	Case report	Male	64	Not specified.	Not specified.	Right superior lumbar triangle.	Laparotomy & Hernioplastic	The postoperative follow- up fifteen months after surgery showed good evolution, without recurrence.
Renck	2009	48	Case report	Male	79	Probably was caused by pleural effusion drainage.	Right kidney.	Right superior lumbar triangle.	Not specified.	Not specified.
Sakarya	2003	49	Case report (case 1)	Male	62	Right loin incision from a nephrectomy for hydronephrosis performed 2 years ago.	Not specified.	The defect was between the iliac crest and 12th rib.	Laparoscopic & Hernioplastic	The postoperative period was uneventful and the patient was discharged on the fourth postoperative day. At the 14th postoperative month control there were no problems and no evidence of recurrence.

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Author	Year	R	Type of study	Genre	Age	Herniation cause	Structure herniated	Type of lumbar hernia	Treatment	Postoperative
Sakarya	2003	49	Case report (case 2)	Female	57	Left loin incision from a left nephrectomy for hydronephrosis performed 1 year ago.	Not specified.	Not specified.	Laparoscopic	The patient was discharged on postoperative day 3. At 10-month follow-up, there was no evidence of recurrence.
Shiiki	1991	50	Case report	Female	50	Transversallis fascia defect.	Descending colon and left kidney.	Left superior lumbar triangle.	Laparotomy & Hernioplastic	Uneventfully.
Shuhaiber	2003	51	Case report and a literature review	Female	57	Lap-and-shoulder belt restrained driver of a car that was struck in the driver's side door by another car.	Right-sided lumbar hernia was seen that contained the right colon with ureteropelvic junction disruption.	Not specified.	Laparotomy & Hernioplastic	She was discharged to home on day 8.The patient continues to do well at her 1-year follow-up.
Steinfield	2001	52	Case report	Female	57	The total hip arthroplasty performed through an anterolateral approach using a straight lateral incision.	Non obstructed loops of small and large bowel.	Large lateral abdominal wall hernia.	Laparoscopic & Hernioplastic	Postoperatively the patient was treated with an abdominal binder and to date has had no problems or recurrence of the mass.
Stevens	1994	53	Case report	Male	40	Bone donor site from a previous posterior lumbar fusion.	Bowel.	Incisional hernia, over the posterior aspect of his right iliac crest.	Laparotomy & Hernioplastic	The patient made an uneventful recovery, and there has been no recurrence of herniation
Sutherland	1995	54	Case Report and Review of Pathogenesis and Treatment	Female	43	Left pyelolithotomy through a dorsal lumbar incision.	Bowel filled hernia.	Lower lumbar triangle.	Laparotomy, Lumbotomy & Hernioplastic	Physical examination and CT 12 months after repair showed resolution of the hernia.
Vagholkar	2013	55	Case report and a literature review	Female	5	Congenital.	Herniation of the spleen, with absence of the lower two ribs on the left side, attenuation of the left posterolateral body wall musculature.	Left posterolateral abdominal wall.	Laparotomy & Hernioplastic	The patient was discharged on the fourth postoperative day. The patient has been following up for 6 months without any recurrence.
Walgamage	2015	56	Case report	Male	33	Not specified.	Retrperitoneal fat.	Superior lumbar triangle.	Laparotomy, Lumbotomy & Herniplastic	The pacient was discharged home on the third post-op day on analgesics.

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Author	Year	R	Type of study	Genre	Age	Herniation cause	Structure herniated	Type of lumbar hernia	Treatment	Postoperative
Wei	2014	57	Case report	Male	76	Not specified.	Abdominal fat.	Left superior lumbar triangle.	Laparoscopic & Hernioplastic.	The patient was discharged on the fourth day after the operation. He returned to the clinic 18 months later without evidence of recurrence.
Zamir	1998	58	Case report	Female	50	High speed motor vehicle crash while sitting in the back seat of a car restrained by a lap belt.	Herniation of the small bowel.	Left flank defect in the abdominal wall with marked proximal small bowel dilatation.	Laparotomy & Hernioplastic	Seven days after the second laparotomy, drainage of enteric content was noted in the drain which was left in the lower abdomen. The enterocutaneous fistula closed spontaneously 3 months later and the drain was removed. She has been followed for 11 months without evidence of recurrence.

R: References.

In the postoperative, the patients usually progressed uneventfully (93.87%) and, during months of follow-up, there was no recurrence of hernia in 89.79% of cases. In only one case (2%) the patient died [20] and in only 2 cases the patient developed a bad condition days after the procediment [30]. Nevertheless, in both of cases, the condition as treated and there was no recurrence in the following months.

Discussion

Hernia is an abnormal protrusion of tissue or organ from its anatomical site to another through a natural orifice or defect in the fibrous musculature septum. This hernia may suffer ischemia and lead to death of the patient if there is constriction of the same. Most hernias occur in the anterior abdominal wall, particularly in the inguinal region. However, other sites may be affected, such as the femoral, umbilical, dorsum, lateral abdomen and lumbar region [1, 59].

Lumbar or dorsal hernia is rare and arises from a defect in the fibro musculature fascia of the posterior wall of the abdomen [1, 4, 60]. Lumbar hernia occurs basically in two places: in the space of Grynfelt or upper lumbar triangle and in the space of Petit or lower lumbar triangle. Grynfelt hernia is more common than Petit's [1, 4, 60].

Lumbar hernias are rare and account for less than 1-2% of all hernias in the abdominal wall. They may occur in the triangle of Grynfelt (upper) and Petit (lower), with Grynfelt hernias being the most common

Lumbar hernias are rare and account for less than 1-2% of all hernias in the abdominal wall. They may occur in the triangle of Grynfelt (upper) and Petit (lower), with Grynfelt hernias being the most common [61].

In Brazil, lumbar hernias are often difficult to diagnose due to lack of imaging services or radiologists in basic health units and secondary care hospitals, together with the lack of surgical experience of a physician with basic training without a medical residency.

The diagnosis of lumbar hernia is usually simple for typical findings on physical examination. Subcutaneous tumors, especially lipomas, should be excluded. The intraoperative finding of lumbar hernia is not uncommon in patients previously diagnosed

with a subcutaneous tumor. Computed tomography is considered the gold standard for diagnosis and assessment of hernia content [65].

At the physical examination a bulging in the lumbar region that can be pronounced with the Valsava maneuver can be noticed, this region is usually painless.

Surgeries for lumbar hernia can be performed in a conventional manner or by laparoscopy. The choice of the operative technique depends on the experience of the surgeon, the conditions of the patient's musculature aponeurotic layer and the diameter of the hernia ring. Generally the tissues are thick and resistant, which must be done two firm suture planes [62].

Despite controversies with better repair, laparoscopic approach, following the same principle of the treatment of inguinal hernias, seems to present significant advantages compared to conventional/open surgeries. However, some technical and anatomical details of the region, non usual to general surgeons, are fundamental for proper repair [63]. Conventional repair using simple suture should be avoided [64].

Patient is placed in the lateral decubitus. Laparoscopic access to abdominal cavity is performed by open technique on the left flank, 1.5 cm incision, followed by introduction of 11 mm trocar for a 30° scope. Two other 5 mm trocars, in the left anterior axillary line, are inserted into the abdominal cavity. The peritoneum of the left paracolic gutter is incised from the 10^{th} rib to the iliac crest. Peritoneum and retroperitoneal is dissected. Reduction of all hernia contents is performed to demonstrate the hernia and its size. A 10x10 cm polypropylene mesh is introduced into the retroperitoneal space and fixed with absorbable staples covering the defect with at least 3-4 cm overlap. Subsequently, is carried out the closure of the peritoneum of paracolic gutter [63].

Conclusion

We concluded that Grynfeltt hernia is a more frequent surgical lesion in female adults and the anatomical and clinical knowledge is impresidivel for the diagnosis and surgical repair of this disease.

Declarations of Interests

The authors declare that they have no competing interests.

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