

Lumbar Hernia (Hernia of Jean Louis Petit and Grynfeltt) about 5 Cases in the Department of Visceral Surgery of the Prefectural Hospital of Koundara

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ABSTRACT

Lumbar hernia is the protrusion of a viscera or fat through a congenital or acquired breach in the lumbar region [1]. The aim of our study was to report 5 cases of lumbar hernia treated in the department and to review the literature.

Patients and Methods: This is a descriptive retrospective study from January 1, 2017 to December 31, 2023, i.e. 7 years. Patients of both sexes operated for lumbar hernia and confirmed intraoperatively were included.

Results: During the study period, 5 cases of lumbar hernia were recorded in the visceral surgery department of Koundara Prefectural Hospital. This was out of a total of 1055 hernia cases, i.e. a frequency of 0.47%, with an average frequency of 1 case/year.

The mean age of patients was 66.2 years, with extremes ranging from 42 to 84 years. They were predominantly male, with a sex ratio of 4. All cases of hernia were acquired, with a mean course of 11.6 months. According to topography, we recorded 4 cases of Jean Louis Petit hernia, including one (1) on the left, two (02) on the right, one (01) bilateral and 1 case of left Grynfeltt hernia.

Ultrasonography was performed in all patients; none of the patients in this series had undergone CT scanning. The approach was lumbar. Surgical exploration revealed: Omentum + small intestine in two (02) patients, sigmoid colon and omentum in one (01) case, fatty mass + omentum in one (01) case, necrotic omentum and sac wall in one (01) case, no bowel resection was performed and epiploic resection was performed in 2 patients, Four (04) patients underwent parietal repair using a raphia, while one (01) patient underwent insertion of a non-absorbable prosthesis. Postoperative follow-up was straightforward in four (04) patients, with one (01) case of parietal suppuration. Length of stay was generally short, from 2 to 6 days, with an average of 2 days.

Conclusion: Lumbar hernia is rare. Weakness of the posterior abdominal wall and intra-abdominal hyperpressure are thought to be the main factors favoring this pathology. Diagnosis is clinical and difficult unless the hernia is strangulated. Imaging plays a role in diagnosis. In our resource-poor environment, the surgeon must refine the clinical detection of this condition, as most patients do not have sufficient means to perform a CT scan, which remains the gold standard.

Keywords

Lumbar Hernia, Case Report, Koundara Hospital.

Introduction

Lumbar hernia is defined as the protrusion of a viscera or fat through a congenital or acquired breach of the lumbar region [1]. Two weak points determine this orifice: GRYNFELT's quadrilateral and JEAN LOUIS PETIT's triangle [2].

Lumbar hernias constitute less than 2% of all hernias, and only 5% of them are inferior, making the Jean-Louis Petit hernia one of the unusual forms of hernia [1,3]. Superior lumbar hernia or GRYNFELT hernia is a rare condition. It accounts for less than 1.5% of all abdominal hernias [1]. Two out of three lumbar hernias are male. Of lumbar hernias, 20% are congenital and 80% acquired [2]. De Carangeot reported the first case of lumbar hernia in 1731 during an autopsy [3]. In 1783, Petit described a case of hernial strangulation in the lower lumbar triangle [4]. Grynfeldt reported a case of hernia in the upper lumbar triangle and distinguished it from the lower triangle in 1850 [5]. Smaller hernias are asymptomatic, while larger hernias appear as tender masses, causing lower back pain. Naturally, these hernias increase in size, which is why intervention is recommended. A CT scan is one of the diagnostic tools available, not only to assess the size of the hernia, but also to determine its content, so that it can be better managed [6]. Hernial strangulation is the main complication [6]. Laparoscopy or open surgery can be performed in the presence of a large defect [7]. The use of prostheses gives better results [7]. We report 5 cases treated in our department.

Patients and Methods

This was a retrospective descriptive study from January 1, 2017 to December 31, 2023, i.e. 7 years. Patients of both sexes operated on for lumbar hernia and confirmed intraoperatively were included.

Observations

Observation 1

Four months after her accident, the 42-year-old patient discovered by autopalpation a reducible swelling of the right lumbar region, expansive on exertion and located immediately above the iliac crest. The swelling had progressively increased in size, causing discomfort due to its volume and pain on violent exertion. Clinical examination and ultrasound confirmed the diagnosis of an uncomplicated Jean Louis Petit triangle hernia. Lumbar repair was proposed. Intraoperative exploration revealed a 5 cm-diameter neck and intra-heritic slippage of the sigmoid colon and omentum adhering strongly to the hernia sac, easy reduction of the sigmoid followed by resection of the sac and its omental contents. Closure of the weak point was achieved by means of raphia. Post-operative management was straightforward, and the patient was discharged on D1 post-op. Two months later, she was symptomatic, complaining of postoperative pain, with no discernible lumbar curvature on palpation.

Case Report

This was a 65-year-old patient who consulted for bilateral lumbar

discomfort and swelling (Figure 1), evolving for 1 year. There was no evidence of vomiting, no cessation of bowel movements or gas. On physical examination, general condition was preserved. A swelling about 15 cm in diameter was located in the right lumbar region, opposite the Jean-Louis Petit triangle, and another 10 cm in diameter in the left lumbar region. The masses were soft, smooth-surfaced, painless, reducible and expansive on exertion (coughing, abdominal hyperpressure). Ultrasound examination showed leptomatous masses opposite the Jean-Louis Petit triangle. A CT scan was not performed. Based on the clinical diagnosis, herniorrhaphy was indicated, approaching the mass via a transverse incision some 4 cm above the iliac crest, with the patient in left lateral decubitus position. Right lumbar incision (Figure 2) Intraoperative exploration revealed, after dissection of subcutaneous tissue, retroperitoneal fat and epiploons protruding through the Jean-Louis Petit triangle, the neck of which was 7cm in diameter (Figure 3). After excision of the fatty mass, the parietal repair was performed by suturing the edges of the hernial orifice with non-absorbable suture. The immediate postoperative course was straightforward, characterized by pain in the surgical wound. The patient was discharged at D1 post-op. Three (03) months after surgery, the patient presented no symptoms, and one year later, there was no recurrence.



Figure 1: Bilateral lumbar swelling.



Figure 2: Right lumbar incision.

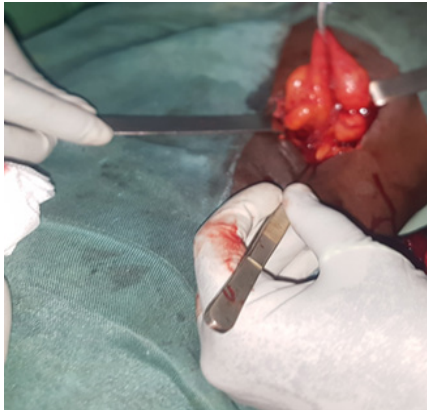


Figure 3: Retroperitoneal fat and epiploons.

Observation 2

An 84-year-old man was admitted to the department with right upper lumbar swelling (Figure 4). The onset was 1 year ago, marked by the progressive appearance of a painless swelling approximately 2cm in diameter. Clinical examination revealed a right upper lumbar tumefaction opposite the quadrilateral of Grynfeldt 5cm in diameter, soft, gurgling, reducible, impulsive to coughing and expansive to intra-abdominal hyperpressure. There was no history of trauma. Ultrasound of the lumbar region revealed a lumbar tumefaction containing an intestinal loop, due to the presence of Brownian movements characteristic of digestive loops on ultrasound. The diagnosis was an uncomplicated upper lumbar hernia. The preoperative work-up was normal. It was decided to operate. The patient was positioned in the left lateral decubitus position. General anesthesia was used. The patient was positioned in the left lateral decubitus position. The right lumbar incision was centered on the swelling. The sac was accessed after retraction of the dorsalis major and external oblique muscles. The sac was dissected down to the hernial opening, which measured 6cm in diameter, separated from the edges of the hernial opening and pushed back. The repair was made by suturing the edges of the hernial orifice with non-absorbable suture. The patient was discharged on postoperative day 2. Postoperative recovery was straightforward.



Figure 4: Prosthesis insertion.

Observation 3

This is a 62-year-old patient, married and a farmer with no particular history, who was seen in consultation for abdominal pain, a painful tumefaction of the left flank which had been evolving for 6 days. The swelling had been present for 2 years.

Clinical examination revealed a painful abdomen with a maximum in the left flank. Clinical examination also revealed a soft, irreducible, painful swelling of the left flank extending to the lower left lumbar region. The diagnosis of a strangulated lumbar hernia was retained. Preoperative work-up was normal. It was decided to operate. General anaesthesia was used. The patient was placed in the left lateral decubitus position. Biological tests were unremarkable. Surgery was performed via a lumbar approach to open the pouch, the contents of which consisted of ecchymotic omentum and The walls of the bag were also necrotic. The contents had protruded through the jean louis petit triangle. The pouch was dissected down to the hernial orifice, which measured 6 cm in diameter. Separated from the edges of the hernial orifice, the pouch and its contents were resected, revealing the hernial orifice at the level of the jean louis petit triangle. Repair was carried out by suturing the edges of the hernia with non-absorbable suture. The patient was discharged on postoperative day 6. The immediate postoperative course was complicated by parietal suppuration. Three (03) months after surgery, the patient presented no symptoms, and one year later, there was no recurrence.

Observation 4

Patient aged 78, farmer, presented with a left lumbar swelling evolving for 6 months, progressively increasing in volume and causing discomfort. On clinical examination, the mass was located above the left iliac crest, impulsive on coughing and reducible. Ultrasound of the lumbar region revealed the absence of an intestinal loop, due to the absence of Brownian movements characteristic of digestive loops on ultrasound. Clinical examination and ultrasound confirmed the diagnosis of an uncomplicated Jean Louis Petit triangle hernia. Lumbar repair was proposed. Intraoperative exploration revealed a 7 cm-diameter neck and an easily reducible intra hernial slip of the small intestine and omentum. The peritoneal sac was resected and the hernia was cured using a propylene prosthesis in the left lumbar pre-facial retro-muscular region. Post-operative management was straightforward, and the patient was discharged on D1 post-op. Four months later, the patient was asymptomatic and able to resume physical activity without any limitations. No lumbar curvature was palpable.

Results

During the study period, 5 cases of lumbar hernia were recorded in the visceral surgery department of Koundara Prefectural Hospital. This was out of a total of 1055 hernia cases, i.e. a frequency of 0.47%, with an average frequency of 1 case/year. The mean age of patients was 66.2 years, with extremes ranging from 42 to 84 years. They were predominantly male, with a sex ratio of 4. All cases of hernia were acquired, with a mean course of 11.6 months.

According to topography, we recorded 4 cases of jean louis petit

hernia, including one (1) on the left, two (02) on the right, one (01) bilateral and 1 case of left Grynfelt hernia. Ultrasonography was performed in all patients; none of the patients in this series had undergone CT scanning.

The approach was lumbar. Surgical exploration revealed : Omentum + small intestine in two (02) patients, sigmoid colon and omentum in one (01) case, fatty mass + omentum in one (01) case, necrotic omentum and sac wall in one (01) case, no bowel resection was performed and epiploic resection was performed in 2 patients, Four (04) patients underwent parietal repair using a raphia, while one (01) patient underwent insertion of a non-absorbable prosthesis.

Postoperative follow-up was straightforward in four (04) patients, with one (01) case of parietal suppuration. Length of stay was generally short, from 2 to 6 days, with an average of 2 days.

Discussion

During the study period, 5 cases of lumbar hernia in 5 years were recorded out of a total of 1,055 hernia cases, a frequency of 0.47% of all hernias. The rarity of lumbar hernias is also reported in the literature, where they account for 2% to 3% of abdominal wall hernias [6]. Since the first publication by Carangeot RJC in 1731, only around 300 cases have been reported, and it has been recognized since 1920 that lower lumbar hernias (or Jean-Louis Petit hernias, eponymous in honour of the Frenchman who described lower lumbar surgical anatomy in 1783) are the most frequent [7,8]. Congenital forms are rare (20%), while acquired lower lumbar hernias are largely secondary [7]. Several risk factors have been described for spontaneous hernias, including age, obesity, extreme thinness, intense weight loss, chronic debilitating disease, muscle atrophy, chronic bronchitis, infected wounds and post-operative sepsis [7,9]. In our study, all cases of hernia were acquired forms. According to the literature, lumbar hernias occur more frequently in male subjects, and are twice as frequent on the left than on the right side [7]. Patients are generally between 50 and 70 years of age [7]. In our study, the age of our patients was consistent with the age range reported in the literature, and hernias occurred more frequently in male subjects, with a sex ratio of 4, and more frequently on the right side than on the left. Occupation, thinness and trauma to the lumbar region were found in our study. The hypothesized mechanism is that the loss of fat promotes rupture of the vasculo-nervous orifices that cross the dorsolumbar fascia. Situations that increase intra-abdominal pressure act as triggers for the appearance of these hernias [6]. Several classifications have been proposed, including that of Alfredo Moreno Egea, which takes into account 6 elements (location, size, content, muscle atrophy, etiology and recurrence) and proposes therapeutic options for each of the 4 types retained [7,8]. Clinical diagnosis of lumbar hernia requires a high degree of clinical suspicion. This depends on size and contents, which may be retroperitoneal fat, kidney or colon, and more rarely, small intestine, omentum, spleen, ovary or appendix [7,9]. Sometimes, the presentation is similar to that of a lipoma. This diagnosis must be ruled out in the presence of a mass

that is expansive on coughing and intense effort, usually reducible and tending to disappear when the patient is supine. The patient usually complains of swelling and, occasionally, pain around the swelling. Usually, the swelling enlarges to the point of altering the symmetry of the trunk [7]. Various paraclinical investigations can be carried out, depending on the clinical presentation. For example, lateral or oblique radiographs of the lumbar region can show gas-filled loops outside the abdominal cavity, if the contents are intestinal. Contrast radiographs of the upper digestive tract help delineate the herniated intestinal segment. Intravenous urography (IVU) helps to identify renal or ureteral displacement within the hernia. Ultrasound does not mount the hernia well, due to a low index of suspicion and the presence of fat [7]. The best paraclinical evaluation remains the CT scan, which provides detailed information on the anatomy of the lumbar region, the extension of the defect, the presence of viscera in the hernia. A CT scan can differentiate hernia from muscular atrophy, in which there is no defect in the fascia and treatment does not involve surgery. It also differentiates hernia from hematoma, abscess and soft-tissue tumor tumors [7,10]. In our study, the diagnosis was made by combining clinical elements with ultrasound findings, which identified a lipomatous mass and Brownian movements characteristic of digestive tracts opposite Jean-Louis Petit's triangle and Grynfelt's quadrilateral. Due to a lack of resources and equipment in our inland hospitals, not a single patient has undergone a CT scan, demonstrating the challenge of managing this type of disease in an underprivileged environment. Surgery is aimed at correcting the defect and reconstructing an abdominal wall that is sufficiently elastic to withstand daily physical stress. It should always be indicated, given the risk of strangulation in the event of intestinal content [7,9]. Various techniques have been described, including anatomical closure, covering of the fascia with musculofacial flaps, and mesh prosthesis insertion via the retroperitoneal or laparoscopic trans-abdominal approach [7]. Laparoscopy offers a number of advantages over the conventional approach, including shorter hospital stay and fewer post-operative complications. There is, however, a greater risk of intraoperative complications [7].

In our study, we performed the herniorrhaphy via an open (lumbar) approach, due to a lack of materials and personnel qualified for extraperitoneal laparoscopy. The repair techniques used in our study were simple anatomical closure in two (02) cases, overlapping of the fascia in two (02) cases, and we used a mesh prosthesis in one patient. The latter is currently recommended as the optimal treatment for unilateral lumbar hernias, in addition to preventing recurrence [7,9].

Conclusion

Lumbar hernia is rare. Weakness of the posterior abdominal wall and intra-abdominal hyperpressure are thought to be the main factors favoring this pathology. Diagnosis is clinical and difficult unless the hernia is strangulated. Imaging plays a role in diagnosis. In our resource-poor environment, the surgeon must refine the clinical detection of this condition, as most patients do not have sufficient means to perform a CT scan, which remains

the gold standard for diagnosis. Despite the various techniques recommended, the open approach remains the most affordable in our environment.

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