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Research Article

Complicated Garengeot's Hernia Associated with an Adnexal Tumor in a High-Rise Hospital

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Abstract

Garengeot's hernia is currently a pathology with low incidence compared to other types of abdominal wall hernias. Consequently, the standardized management of this condition is scarce in the medical literature. It is, therefore, of paramount importance to report this typeof case every time it occurs in hospital institutions, an even more so if they occur in hospitals that are in the high-rise category. In this instance, a clinical case is presented involving a female patient who was admitted tothe emergency department with symptoms consistent with intestinal obstruction. The decision to proceed to surgery revealed a left adnexal tumor and a right Garengeot hernia associated with acute appendicitis, causing retrograde obstruction of the colonic framework from the sigmoid colon. The surgical intervention resulted in a Hartmann I colostomy due to a neoplastic history. The patient exhibited a favorable postoperative course until the time of discharge, with no signs of organic symptoms related to the surgical procedure were observed during follow-up appointments.

Keywords: Garengeot's Hernia; Intestinal Obstruction; Pelvic Tumor

Introduction

Hernia is defined as the protrusion of an intracavitary structure through an anatomically formed orifice. They can manifest from childhood to advanced age, where various types are frequently observed [1,2]. Among the types of anterior abdominal wall hernias, inguinal hernias and their variations (Amyand's hernia, Littré's hernia, Richter's hernia, etc.) are identified, as well as the semilunar line hernia (Spiegel's hernia), crural hernia, and its described variation (Garengeot's hernia) [2]. The latter may represent at least 1% of all hernias of the inguinal myopectineal orifice, and when associated with acute appendicitis, it may account for 0.08% to 0.13% of total cases [2-4]. The clinical presentation of acute appendicitis is often attributed to the incarceration of the appendicular base caused by appendicoliths [5]. However, uncertainty persists regarding whether the incarceration itself precipitates appendicitis or if the appendicolith per se instigates the clinical manifestation [6]. As predisposing factors to its development, laxity of tissue, embryological malrotation of the cecum, as well as an anatomical variant of the appendix's implantation can be identified [7,8]. According to a clinical case report, chronic obstructive pulmonary disease could also serve as a predisposing factor [9]. Concerning the clinical examination,it holds paramount significance as it cannot be readily differentiated

from a crural hernia of typical etiology. Consequently, there are instances where surgical intervention is initiated under the presumption of a routine crural hernia, without awaiting the possibility of revealing appendicular content [5,10]. Nevertheless, in the event of an irreducible cruralhernia coupled with elevated acute-phase reactants, suspicion of Garengeot's hernia arises due to the potential for concealed perforation within an anatomical sheath [11]. According to literature reviews and clinical case reports, auxiliary examinations that provide additional assistance include computed tomography, which also plays a pivotalrole in facilitating appropriate preoperative planning [7,12,13]. Currently, there are very few reports on Garengeot's hernia, given its infrequent occurrence, making its detection challenging, especially when associated with appendicular involvement. In cases where there is no inflammatory compromise of the appendix, the preferred treatment involves repair, either through open surgery or laparoscopic technique (TAPP), contingent upon an experienced surgeon capable of addressing both the appendicular condition and the hernia [14].

Despite documented clinical cases, the appropriate treatment for Garengeot's hernia with acute appendicitis remains debatable [11]. Possible interventions range from an appendectomy, lavage, andclosure with or without tension in the hernia [15] to the creation of an ostomy due to potential obstruction resulting from the inflammatory/infectious process in the crural area. This complex scenario, termed complicated Garengeot's hernia, should be managed based on the hernial defect's status, surgical site condition, and the surgeon's expertise [16,17]. The most frequent post-surgical complication documented is surgical wound infection, occurring in up to 29% of cases [18]. This complication is attributed to potential bacterial translocation in the incision area. Other complications, such as necrotizing fasciitis, hernial sac necrosis, inguinal abscesses, and even mortality, may arise due to delayed diagnosis and treatment [13]. Given the rarity of encountering acute appendicitis within a Garengeot's hernia, it is even more challenging to identify an adnexal mass associated with it, whether potentially benignor malignant, which could predispose to the herniation of the appendix. The management of both pathologies is not standardized for simultaneous handling, making this an exceptional and extremely rare case that is of paramount importance to report, even more so when it is evident at a height of 3824 meters above sea level, not knowing whether or not it will have to be related as a predisposing factor for the development of said disease, since there is no report in the bibliography where the clinical picture is presented at the aforementioned height.

Case Presentation

A 58-year-old female patient with incomplete primary education, engaged in routine household activities and lacking extrahousehold occupational exposure, and without deleterious habits, presents with a medical history of vesicovaginal fistula and cervical cancer. She presents to the emergency department with an illness duration of approximately 3 days, characterized by insidious onset of abdominal pain localized in the right hemiabdomen. The pain is intermittent, of a stabbing nature, increasing in frequency and intensity. Concurrently, the patient experiences bilious vomiting up to 10 times, with no passage of flatus or bowel movements. On examination, the patient manifests distress, displaying a compromised overall appearance. Mucous membranes are semi-dry, pink conjunctivae, and capillary refill is less than two seconds. The neck is symmetric and cylindrical, with no palpable lymphadenopathy. The chest is symmetric with preserved expansion and elasticity. Vesicular murmur is conserved in both lung fields, with no added sounds. Cardiovascular examination reveals rhythmic heart sounds without murmurs. The abdomen is minimally mobile during respiration, distended, and without palpable masses or skin lesions. Bowel sounds are increased over the colonic region. Superficial and deep palpation of the right iliac fossa and hypogastrium elicits pain, indicating peritoneal irritation in the lower hemiabdomen. In the inguinal region, no masses are evident; however, palpation induces pain in the right inguinal area. The extremities are symmetrical, mobile, and without edema. Neurologically, there are no signs of meningeal irritation or focal deficits.

Admission vital signs: BP: 110/80 mmHg HR: 104 bpm RR: 19 bpm Temp: 38 ºC SpO2: 89%. A radiological examination reveals marked dilation of the colonic framework and the presence of 5 hydroaeric levels (Figure 1). Blood tests indicate the following results: leukocytes: 13.4 u/l, segmented cells: 80.6%, Hb: 12.7 g/dl, platelets: 519 x 10^3/µl, creatinine: 0.63 mg/dl, urea: 28.5 mg/dl, glucose: 100 mg/dl, and C-Reactive Protein (CRP): 18.2 mg/dl. The diagnosis of mechanical intestinal obstruction is established, leading to the decision for surgical intervention. The patient undergoes a surgical procedure in the operating room under general inhalation anesthesia, with a surgical duration of approximately 2 hours. The performed procedure includes exploratory laparotomy, tumorectomy, left salpingectomy, appendectomy, and Hartmann 1 sigmoidectomy, with laminar drainage in the retroperitoneal and bloody areas. The surgical intervention is prompted by the diagnosis of complicated Garengeot hernia associated with left adnexal mass and retroperitoneal abscess. Findings include a well-defined solid-cystic left adnexal mass measuring approximately 15x13 cm adhered to the left adnexa, along with a Garengeot hernia on the right with a diameter of approximately 1 cm (Figure 2).Within the hernia, the presence of the cecal appendix with inflammatory changes in the middle and distal thirds is observed (Figure 3). This condition results in an obstructive, necrotic, and perforative

process of the sigmoid colon into the retroperitoneum, containingfecal-purulent material of approximately 250 cc. No peritoneal implants are evident.

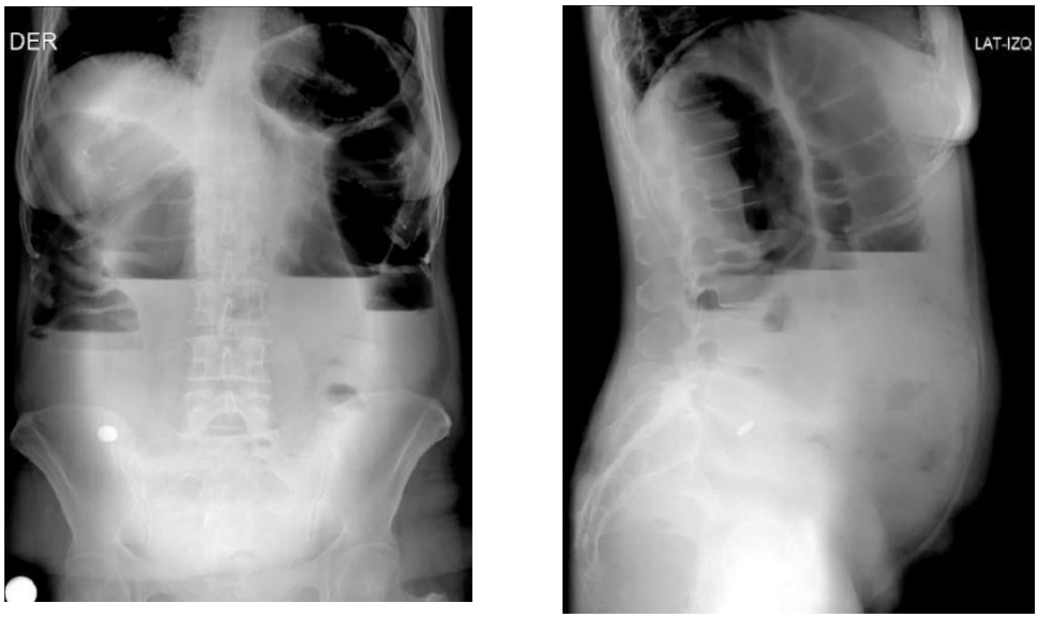

Figure 1: Standing and left lateral plain abdominal X-ray.

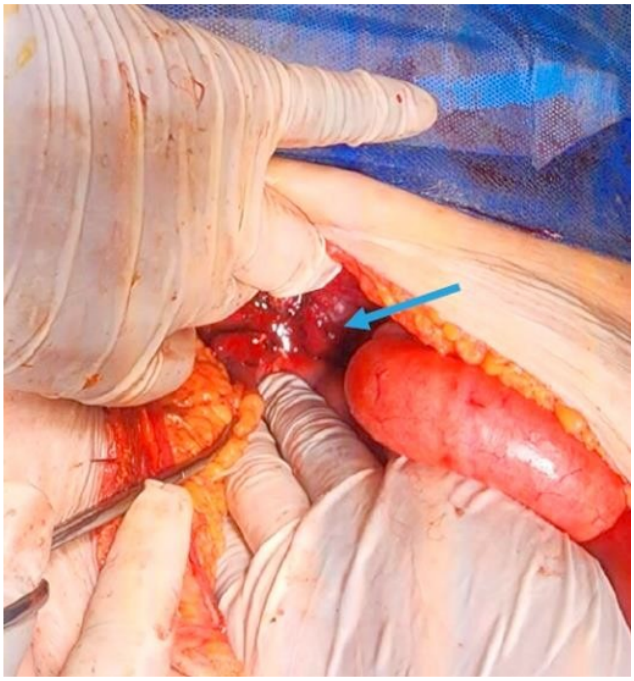

Figure 2. Identification of the crural defect.

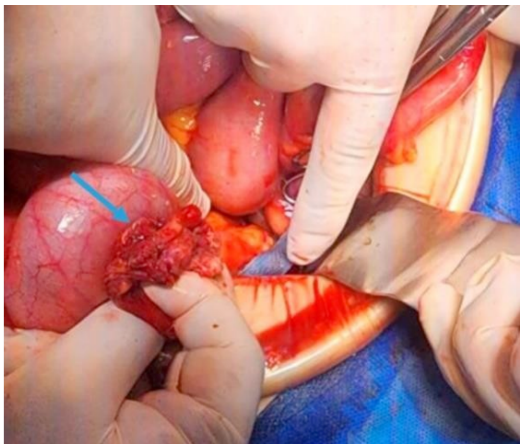

Figure 3: Exposure of the cecal appendix with inflammatory changes.

The patient has had a favorable postoperative hospital course for 8 days, during which she received care from pulmonology and physical medicine and rehabilitation due to the possibility of atelectasis from mechanical ventilation. Broad-spectrum antibiotic coverage with vancomycin and meropenem was initiated. Oral intake commenced 12 hours post- surgery with a wide liquid diet, progressing according to tolerance. Throughout her stay, there were no variations in the surgical wound, and the functioning ostomy was established approximately 8 hours post-immediate surgery. Initially, drainage exhibited seropurulent characteristics at a rate of approximately 200 cc/24 hours, which decreased to approximately 50 cc with a serous character at the time of discharge, leading to its removal. At present, the patient is engaging in occupational activities without functional limitations. She attended her outpatient follow-up appointment, reporting no organic discomfort but expressing discomfort with ostomy management. The histopathological result of the left adnexal mass indicates a "serous cystadenoma consistent with tubal origin." The patient is currently under oncology follow-up for the management of the previously mentioned cervical cancer.

Discussion

The management of inguinal hernias is a common challenge for surgeons in their daily practice. The approach to these hernias ranges from relatively straightforward procedures to potential complications such as inguinodynia, infections of prosthetic materials, injury to adjacent structures, etc. [2]. A crural hernia containing the cecal appendix is termed Garengeot hernia, with its earliest reference found in ancient texts such as the Ebers Papyrus in 1560 B.C. [19]. Named in homage to the French physician René-Jacques Croissant de Garengeot, who initially described it in 1731 [7], this hernia underwent surgical treatment by Hevin in 1785 [13]. In comparison with the literature, akin to a ventral hernia containing the cecal appendix, it did not manifest clear symptomatic features, aligning with the notion that hernias containing the cecal appendix may not present the vivid clinical picture of typical acute appendicitis [4]. Encountering a Garengeot hernia with concurrent acute appendicitis and association with a pelvic mass introduces a more complex scenario, given the potential requirement for diverse therapeutic strategies. In this case, the decision was made to excise the fully delimited left adnexal mass, followed by appendectomy, while leaving the hernial defect fora subsequent intervention. The consideration of an ostomy was prompted by the patient's history of cervical neoplasm, which could have compromised the intestinal tract.

Opting forprimary anastomosis could pose immediate or delayed surgical risks, including the potential for dehiscence, fistulization, etc. Moreover, the risk of complications was heightened due to the localized infectious process in the operative site.In the absence of interventional radiology and round-the-clock diagnostic imaging supportat our institution due to staffing limitations, the utilization of intracavitary drains was chosen. This decision was predicated on the potential infectious sequelae associated with the existing appendicular pathology within the hernia, with the primary objective of assessing the nature and volume of the secretions through the drainage procedure. The engagement of a gynecologist within the operating theater assumed paramount importance for the meticulous evaluation of the adnexal mass and the determination of itsextractability. This underscores the imperative of a multidisciplinary approach, exemplified by the presented clinical case, to aptly contribute to the patient's amelioration. Presently, the patient has seamlessly reintegrated into her routine activities, evidencing a favorable postoperative trajectory, and is actively participating in outpatient oncology follow-up due to the aforementioned medical history. In the context of Peruvian literature, a report from 2013 highlights signs of inflammation in the proximal third of the appendix. Consequently, they perform a free stump appendectomy, mirroring our case where hernial ring repair was deferred for a subsequentintervention [20].

Conclusion

Garengeot hernias are presently considered rare; however, their study and proficiency inmanaging them should not be overlooked. In instances where they are associated with intestinal obstruction, considerations may include resection with anastomosis and/or ostomy, contingent upon clinical, laboratory, and intraoperative conditions. Additionally, evaluating potential concomitant diseases is essential. It is crucial to emphasize that if there is involvement of a non-intestinal intra-abdominal organ, the assessment by the relevant specialist becomes paramount to make the most informed decisions in such cases.

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