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CASE REPORT

Comprehensive Surgical Approach To Acute Abdomen With Combined Pathologies: A Case Report From Paraguay

Abordaje Quirúrgico Integral En El Abdomen Agudo Con Patologías Combinadas: Reporte De Un Caso Inusual En Paraguay

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ABSTRACT

Acute abdomen requires urgent intervention for potentially life-threatening conditions. We report the case of a 59-year-old male with acute abdominal pain and bloody stools treated at the Regional Hospital of Pilar, Paraguay. Exploratory laparotomy revealed intestinal ischemia with necrosis, congestive appendicitis, inguinal hernia, colocolic intussusception, and diverticulosis. A comprehensive surgical approach resulted in favorable postoperative recovery. This case highlights the critical role of timely diagnosis and multidisciplinary management in optimizing outcomes for complex acute abdomen presentations.

Keywords: Acute Abdomen; Intestinal Ischemia; Appendicitis; Inguinal Hernia; Intussusception.

RESUMEN

El abdomen agudo es una emergencia quirúrgica que abarca diversas patologías graves. Presentamos el caso de un hombre de 59 años con dolor abdominal agudo y deposiciones sanguinolentas, atendido en el Hospital Regional de Pilar, Paraguay. Durante una laparotomía exploratoria se hallaron isquemia intestinal con necrosis, apendicitis aguda, hernia inguinoescrotal, invaginación colo-cólica y pandiverticulosis. El manejo quirúrgico integral permitió una evolución postoperatoria favorable. Este caso resalta la importancia de un diagnóstico oportuno y un enfoque multidisciplinario para optimizar resultados en pacientes con abdomen agudo complejo.

Palabras clave: Abdomen Agudo; Isquemia Intestinal; Apendicitis; Hernia Inguinal; Intussusception.

INTRODUCTION

Acute abdomen is a common surgical emergency that encompasses a spectrum of diseases involving the abdominal cavity and requiring urgent surgical intervention.[1] The causes of acute abdomen are diverse, including appendicitis, intestinal ischemia, hernias, intestinal invagination, and diverticular disease. The simultaneous presentation of multiple pathologies, as in the case of this report, is extremely rare and poses a significant diagnostic and therapeutic challenge. Timely intervention in these cases is crucial to avoid serious complications and improve the patient's prognosis.[2,3]

Among the most common causes of acute abdomen is acute appendicitis, which is inflammation of the vermiform appendix and can rapidly progress to perforation and peritonitis if not treated properly.[1,4] When appendicitis occurs in conjunction with other abdominal pathologies, such as intestinal ischemia or hernias, clinical and surgical management becomes more complex, increasing the risk of morbidity and mortality.[5,6] Intestinal ischemia, although less common, is an extremely serious condition that leads to intestinal necrosis if not treated quickly, further complicating the clinical picture of acute abdomen.[3,6]

Indirect inguinal-scrotal hernias are another factor contributing to acute abdomen. These hernias are common but do not always cause complications; however, when they are present in combination with other abdominal pathologies, treatment becomes more difficult. Intestinal intussusception is rare in adults, being more common in children, and is usually associated with intestinal or inflammatory masses. This condition can also cause intestinal obstruction, which aggravates the clinical picture and requires immediate intervention.[5]

The differential diagnosis of acute abdomen is based on a combination of medical history, physical examinations, and imaging studies. Computed tomography (CT) has proven to be a key tool in the evaluation of patients with complex acute abdomen, allowing the simultaneous identification of multiple pathologies, which facilitates surgical planning. This case report highlights the importance of a comprehensive and multidisciplinary surgical approach in the management of patients with multiple severe abdominal conditions.[7]

The objective of this article is to report a rare clinical case of acute abdomen with multiple pathologies, including necrotic intestinal ischemia in the small intestine, acute congestive appendicitis, uncomplicated indirect inguinal-scrotal hernia, colo-colic intussusception, and pandiverticulosis. In addition, it discusses comprehensive surgical management based on a review of the available scientific literature, highlighting the associated diagnostic and therapeutic challenges.

CASE REPORT

A 59-year-old male patient was admitted to the emergency department of the Regional Hospital of Pilar, Paraguay, with a clinical picture of severe abdominal pain accompanied by bloody diarrhea. Upon arrival, an initial evaluation was performed, including a complete blood count, biochemical profile, and arterial blood gases, along with a conventional abdominal X-ray, which showed no definitive findings. Given the persistence of symptoms and the suspicion of acute abdominal pain, it was decided to perform emergency surgery.

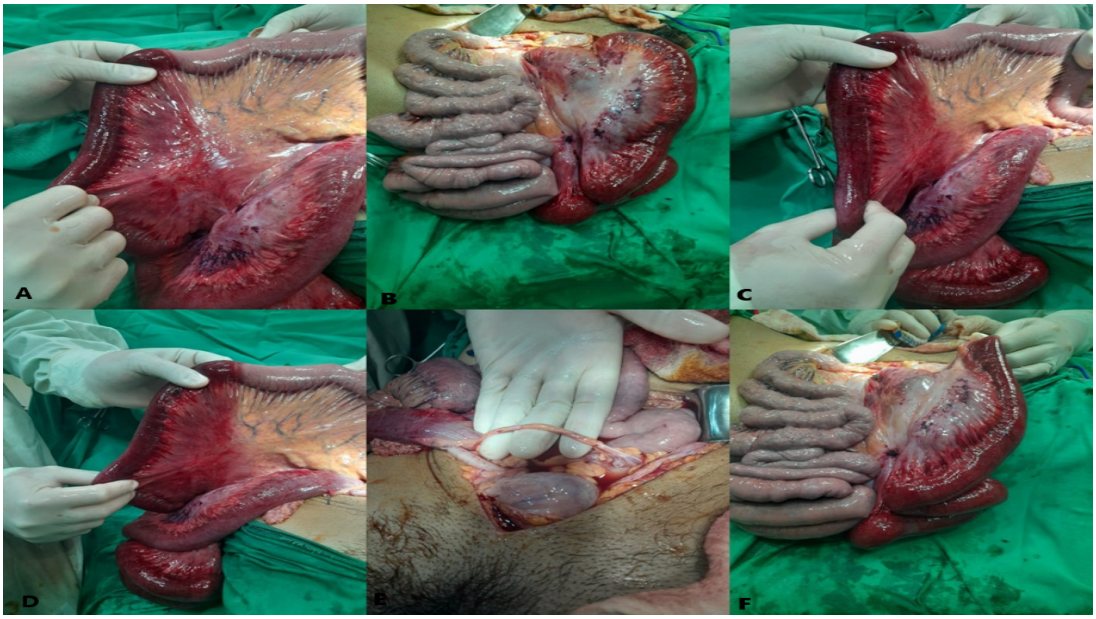

Figure 1. Surgical findings during exploratory laparotomy of the patient

The patient underwent an exploratory laparotomy under spinal anesthesia, an unusual anesthetic modality for this type of major abdominal surgical procedure, given the multiple diagnoses that were confirmed, and which could be resolved within the limited time established by the aforementioned anesthetic technique, without having to resort to endotracheal intubation. This decision was made to reduce the risks associated with general anesthesia, considering the patient's characteristics and the urgency of the clinical picture.

During the laparotomy, a necrotic segment of the small intestine was identified, secondary to a single adhesion (rare as there was no previous surgical history), which required surgical resection. In addition, edema and enlargement of the cecal appendix were found, so it was decided to perform an incidental appendectomy. During the same procedure, an indirect inguinal-scrotal hernia was diagnosed and repaired, and a colo-colic

intussusception found during the abdominal examination was reduced. Colonic diverticulosis was also observed, but due to the absence of signs of active inflammation or complications, conservative management of this condition was chosen.

The images show intestinal ischemia complicated by necrosis (A, C, D, F) and a single adhesion with enlargement of the appendix, consistent with congestive appendicitis (E).

The postoperative course was carefully monitored through periodic clinical evaluations and additional imaging studies. The patient had a favorable recovery, with no immediate complications resulting from the surgery or the spinal anesthesia used. The multidisciplinary approach, together with the choice of a locoregional anesthetic technique, without the complications associated with general anesthesia, allowed for rapid postoperative recovery and adequate patient evolution.

DISCUSSION

This clinical case makes a valuable contribution to the literature due to the coexistence of multiple serious abdominal pathologies which, although they have been reported individually, rarely occur simultaneously.[2,5] The combination of intestinal ischemia with necrosis, acute congestive appendicitis, indirect inguinal-scrotal hernia, colonic intussusception, and pan diverticulosis is extremely unusual. In addition, the comprehensive surgical approach, performed under spinal anesthesia, introduces a significant variation in the anesthetic management traditionally used in major abdominal surgeries, where general anesthesia is usually the preferred option.[9]

Intestinal ischemia, found as a serious complication of a single adhesion in this patient, is a rare but potentially fatal cause of acute abdomen, accounting for approximately 1 % of cases. Delay in diagnosis and treatment can lead to extensive intestinal necrosis, with a high risk of mortality. In this patient, early identification of intestinal necrosis and subsequent resection of the affected segment, together with primary T-T anastomosis, were decisive factors in his favorable outcome.[3] The literature highlights the importance of early surgical intervention, which remains the treatment of choice in these cases.[5]

Acute congestive appendicitis is a less common variant of appendicitis, and although it does not present with immediate perforation, it has the potential to progress to a more severe form if not addressed in a timely manner. In this case, incidental appendectomy was justified by the edema and enlargement of the appendix observed during laparotomy. This early approach likely prevented the development of more serious complications, such as perforation or peritonitis, which would significantly increase the patient's morbidity. The coexistence of appendicitis with other intra-abdominal pathologies, such as intestinal ischemia, can complicate surgical management, reinforcing the need for continuous monitoring and precise surgical decisions.[4,5,10,11]

Indirect inguinal-scrotal hernias are common but rarely complicated by other acute intra-abdominal conditions, as observed in this case. Repairing this hernia during the same surgical procedure minimized the risk of future complications and avoided the need for a second surgery. Although the patient showed no signs of hernia incarceration or strangulation, simultaneous correction of the hernia, along with the other pathologies found, highlights the importance of comprehensive surgical management to reduce the risks of morbidity.[12,13]

Colocolic intussusception in adults is extremely rare and is often associated with structural lesions, such as polyps, tumors, or diverticula, which differs significantly from the common idiopathic causes in children. In this case, the intussusception was resolved by manual reduction during laparotomy. This intervention was crucial to prevent progression to complete intestinal obstruction or ischemi, which can be fatal if not treated quickly. Colo-colic intussusception accounts for less than 5 % of all cases of intussusception in adults, underscoring the uniqueness of this finding.[14,15]

Although not the direct cause of acute abdomen in this patient, pandiverticulosis represents a relevant finding that may have aggravated the symptoms. The absence of active inflammation or perforation justified conservative management. According to the literature, patients with diverticulosis generally do not require surgical intervention unless they have complications such as diverticulitis or perforation. This conservative approach was the most appropriate in this case, given that there were no signs of diverticulitis, thus avoiding unnecessary procedures and additional risks.[16]

What distinguishes this report is the decision to use spinal anesthesia, an unconventional approach in this clinical context, which avoided the need for endotracheal intubation and resulted in a favorable postoperative recovery. The existing literature has not extensively documented this anesthetic approach in such complex cases, suggesting that it may be a viable alternative in patients at high risk for anesthetic complications. This case could influence the future management of patients with similar combined pathologies, suggesting that, in experienced hands, spinal anesthesia could reduce postoperative morbidity without compromising surgical outcome.[9,17]

Compared to previous studies, where surgery is predominantly performed under general anesthesia, this case raises the possibility of expanding the indications for spinal anesthesia in urgent and complex situations. The use of this technique and the patient's successful recovery raise important questions about how to optimize

anesthetic management in patients with acute abdomen, especially those with combined pathologies that present surgical challenges.[17,18]

Future studies comparing the use of spinal anesthesia with general anesthesia in similar contexts of complex acute abdomen would be beneficial. This could help establish more concrete guidelines for multidisciplinary management and optimize diagnostic and therapeutic strategies, thereby improving clinical prognosis and reducing long-term morbidity in patients with complex surgical presentations.

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CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

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