CASE REPORT



A rare acute abdominal condition: omental torsion in a 30-year-old male patient. Case report

Una rara Patología de Abdomen Agudo: torsión Omental en paciente masculino de 30 años. Reporte de Caso

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ABSTRACT

Omental torsion is considered an uncommon cause of acute abdominal pain in patients. It is a medical condition in which the omentum pedicle, which is a tissue structure in the abdomen, rotates around its own axis. This twisting can negatively affect its blood supply, compromising its proper vascularization and can lead to complications in the patient's health. In the vast majority of clinical situations, cases tend to manifest in the right hemiabdomen. This is largely due to the fact that the omentum in this area is larger and more mobile than in other abdominal regions. As a consequence of these characteristics, it is possible for it to be confused with a frequent acute abdominal pathology, such as appendicitis. However, the presence of infarction in the omentum located on the left side of the body has also been documented, affecting either a specific portion of the omentum or even encompassing its entire extent. This phenomenon may have an origin that is considered primary or, on the contrary, it may be a secondary result of other medical conditions. A 30-year-old male patient presents at the doctor's office. He reports that he has been feeling acute abdominal pain, which has recently begun to manifest itself.

Keywords: Omental Torsion; Acute Abdomen; Appendicitis.

RESUMEN

La torsión del omento es considerada una causa poco común que puede provocar un dolor abdominal agudo en los pacientes. Se trata de una condición médica en la que el pedículo del omento, que es una estructura de tejidos en el abdomen, gira alrededor de su propio eje. Este giro puede afectar negativamente su suministro de sangre, lo que compromete su correcta vascularización y puede provocar complicaciones en la salud del paciente. En la gran mayoría de las situaciones clínicas, los casos suelen manifestarse en el hemiabdomen derecho. Esto se debe, en gran medida, al hecho de que el omento en esta área presenta un tamaño más grande y una mayor movilidad en comparación con otras regiones abdominales. Como consecuencia de estas características, es posible que se confunda con una patología abdominal aguda frecuente, tal como es el caso de la apendicitis. No obstante, también se ha documentado la presencia de infarto en el omento localizado en el lado izquierdo del organismo, afectando ya sea una porción específica del omento o incluso abarcando la totalidad de su extensión. Este fenómeno puede tener un origen que se considera primario

© 2025; Los autores. Este es un artículo en acceso abierto, distribuido bajo los términos de una licencia Creative Commons (https:// creativecommons.org/licenses/by/4.0) que permite el uso, distribución y reproducción en cualquier medio siempre que la obra original sea correctamente citada o, por el contrario, puede ser un resultado secundario de otras condiciones médicas. En el consultorio se presenta un paciente de sexo masculino que tiene 30 años de edad. Este individuo expresa que ha estado sintiendo un dolor abdominal agudo, el cual ha comenzado a manifestarse de manera reciente.

Palabras clave: Torsión Omental; Abdomen Agudo; Apendicitis.

INTRODUCTION

Omental torsion is a relatively rare cause of acute abdomen and often manifests with symptoms that can easily be confused with those of acute appendicitis. In the vast majority of situations, cases are identified and diagnosed during a laparotomy.⁽¹⁾ It can be classified into two categories: primary and secondary. The primary form is characterized by its occurrence without evidence or signs of previously existing intra-abdominal pathology.

The pathological process known as omental torsion occurs when the omentum rotates around its longitudinal axis.⁽²⁾ This rotation decreases blood flow to the distal portion of the omentum, which may result in infarction in the affected area.

There is no clear information on this condition's pathogenesis and the clinical features observed. The available laboratory findings are too general and do not point to a specific diagnosis.⁽³⁾ The section of the affected omentum tends to be located on the right side of the body's midline, as this area is generally more mobile than the part on the left.⁽⁴⁾

This type of information or category can be classified into two distinct groups, known as primary or secondary. The term 'primary torsion' refers to a situation where no underlying pathological cause can be identified to explain the observed phenomenon. Secondary torsion, a phenomenon that occurs in the context of various medical conditions, is related to several other pathologies that manifest in the abdominal cavity.⁽⁵⁾ These pathologies may include, among others, cysts that form in the omentum, adhesions that are bands of tissue that may cause obstructions, hernias, which are protrusions of organs through an abnormal opening, as well as the presence of tumors that may develop in that area. Secondary torsion, which refers to a specific type of rotation or twisting, is more frequent than primary torsion.⁽⁶⁾

In the vast majority of cases, the diagnosis is made during the operation, known as an intraoperative diagnosis. According to studies compiled in the scientific literature, documented preoperative diagnosis rates vary significantly, ranging from 0,6 % to 4,8 % in the totality of cases analyzed. They are notably more common in older adults.⁽⁷⁾

CASE REPORT

This is a patient who, in this specific case, is a man in his 30s. It is essential to mention that this individual has no significant medical history, nor has he undergone any previous surgery that could have impacted his current state of health. The patient has come to the medical consultation because he is experiencing intense and stabbing pain in the abdominal region, which is specifically located in the iliac fossa on the right side of his abdomen. This discomfort has been present and has lasted for a temporary period of approximately 24 hours; however, in the last 4 hours, it has experienced a notable and significant increase in intensity. Furthermore, the patient has clearly expressed that he is experiencing recurrent episodes of nausea, and, as a result of this situation, he has noticed a significant reduction in his desire to eat, a symptom referred to as hypoxia.

The patient is admitted to the General Surgery Department, where he undergoes the relevant physical examination. His vital signs are as follows: heart rate 130 beats per minute, saturation 92% with fio 21%, blood pressure 96/61 mmHg, respiratory rate 22, and temperature 38.5°C axillary.

On physical examination, the patient had a high temperature indicative of fever but was adequately hydrated. On palpation of the abdomen, the area is soft and compressible, although there is some pain, especially in the right lower quadrant. In addition, the MacBurney and Blumberg tests are positive, suggesting the possibility of peritoneal irritation. Hydro-aerial sounds are also detected, indicating bowel activity.

Complementary blood tests were carried out, and the CBC showed 12,230 leucocytes, slight neutrophilia 83,6 %, hemoglobin 13,7 g/dL, glycemia 86, and creatinine 0.8. Ultrasonography of the abdomen revealed no relevant data.

Imaging tests were within normal pathophysiological parameters.

An exploratory laparoscopy procedure was performed to examine the situation further. As a result of this intervention, a serosanguinous exudate was observed, which is estimated to have a volume of approximately 345 cubic centimeters. This type of exudate is explicitly located in the lower right quadrant of the abdomen. In this area, it can be noted that the right hemiepiplon shows signs of involvement or alteration. In this particular region of the body, different areas can be observed that manifest ischemia, in addition to those undergoing

necrosis. This pathological process contributes to creating a plastron, i.e., an abnormal accumulation of tissue that forms due to impaired blood circulation and cell death.

As a result of the findings obtained during the surgical procedure, it was concluded that a laparotomy was necessary. This type of surgery was performed through the abdomen's midline, allowing access to the internal organs to assess and treat the detected situation. During this surgical intervention, a complete twisting of the omentum on the patient's right side was visible, exhibiting seven rightward twists, as illustrated in Figure 1. This section of the omentum was in an ischaemic state, meaning it did not receive the adequate blood supply it needed to function correctly. As a result of this lack of blood circulation, it had become infarcted and had developed necrotic tissue, indicating that the cells were dying due to oxygen and nutrient deprivation. This process created a remarkable and significant mass with 14 cm in length and 6,5 cm in diameter. It was partially covered by thin fibrin bands, as illustrated in figure 2. Given the highly critical situation that arose, the decision was made to perform a partial omentectomy in the region attached to the proximal pedicle, specifically in the area where the torsion was observed.



Figure 1. Omental torsion don evidenced by 7 right turns



Figure 2. Omental torsion, ischaemic and necrotic area omentectomy process

The patient has shown a markedly positive evolution in his state of health. After a 72-hour recovery following surgery, he was discharged from the hospital. This decision indicates that his condition has improved considerably, allowing him to return to the comfort of his home. Detailed and continuous patient condition monitoring was carried out over one year. Throughout this time, no complications or adverse events could affect his health.

DISCUSSION

The greater omentum, also known as the gastrocolic ligament, is formed from a structure consisting of two layers of peritoneum that are bound together. This tissue extends from the greater curvature of the stomach and the proximal part of the duodenum, and its function is to cover and envelop the different portions of the loops of the small intestine.⁽⁸⁾ This organism has both a descending and an ascending component, resulting in the formation of a total of four distinct layers of adipose tissue. In addition, these layers have gastroepiploic vascular structures, which can move within the peritoneal cavity.

Torsion of the greater omentum, a relatively rare medical condition, accounts for approximately 1,1 % of cases of acute abdominal pain in the population.⁽⁹⁾ This condition tends to occur more frequently on the right side of the abdomen, which may be attributed to the superior length and mobility of the right side of the abdomen and its lower blood supply compared to other areas. Elements that have been identified as risk factors in this context are, on the one hand, obesity and, on the other hand, being male. Furthermore, it is essential to note that the prevalence of these factors tends to be more common in individuals in their forties and fifties.⁽¹⁰⁾

Surgical intervention, which is carried out in a planned and careful manner, stands as the most crucial and essential treatment method in situations where there is a lack of clarity or certainty regarding the patient's diagnosis.⁽¹¹⁾ This alternative is primarily chosen in circumstances where it has been observed that the various assessments and findings in the clinical setting, together with radiological imaging findings and laboratory test results, indicate a marked deterioration or worsening of the patient's condition, even when the patient has been receiving conservative, less invasive treatment.⁽¹²⁾ It is recommended that surgical intervention be considered in cases where vascular lesions are found to be irreparable or non-recoverable. This is particularly relevant in situations where, in addition, haemoperitoneum and omentum necrosis are observed, as these conditions can significantly complicate the patient's condition.

The primary goal of performing surgery is to correct the torsion in the affected area to optimally restore adequate blood flow to the region that this medical situation has impacted.⁽¹³⁾ In circumstances where the conditions are not highly complex, the surgical process may involve correction of the omentum torsion and removal of any tissue that is necrosis or, in simple terms, dead. This type of surgery can be performed using the laparoscopic technique, which offers many significant advantages over traditional methods. Among the various benefits that can be highlighted is the fact that smaller incisions are made when compared to other methods or techniques, which in turn leads to a significant reduction in the trauma experienced by the patient.^(14,15) In addition to its other benefits, laparoscopy provides significantly improved visualization of the abdominal cavity, making it considerably easier to identify any abnormalities that may be present. Due to the features above, the time needed for a patient to recover is usually significantly shorter. In addition, when comparing this approach to the conventional method of exploratory laparotomy, a decrease in the number of complications traditionally associated with injuries or wounds resulting from the procedure is noted. A thorough review of the available medical literature has concluded that laparoscopy, which is applied for diagnostic and therapeutic interventions, shows several significant benefits. In addition, this surgical approach is generally associated with a lower complication rate compared to other surgical treatment modalities that could be used.⁽¹⁵⁾

CONCLUSION

Omental torsion is an uncommon medical condition that clinically may mimic other diseases that cause an acute abdomen, such as appendicitis. However, it may be suspected before surgery if a specific finding is observed on a computed tomography (CT) scan, described as the 'swirl sign' in the greater omentum. This distinctive sign helps physicians identify omental torsion and differentiate it from other possible causes of acute abdominal pain. Radiologists can diagnose accurately if they know the pathology and recognize the distinctive findings on radiological images.

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CONSENT

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CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

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