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Liver abscess as a complication of gastric Roux Y bypass: Case report

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ABSTRACT

Obesity has been presented as a disease associated with high morbidity, due to the involvement of obesity per se, and the worsening of other associated morbidities such as type 2 Diabetes Mellitus, systemic arterial hypertension, dyslipidemia, coronary heart disease, obstructive sleep apnea, psychiatric disorders within others. Obesity treatment begins with lifestyle changes, physical activity, nutritional support; and can extend to support with a team of medical specialties, such as endocrinology. Despite the multidisciplinary nature of the initial treatment, the number of patients who are unsuccessful in losing weight and consequently improving their morbidity and quality of life is significant. As an additional therapy in these cases, bariatric surgery has emerged as a procedure that is gaining ground. The proposed surgeries present different mechanisms to obtain the result, including malabsorptive, restrictive and mixed. Regardless of the surgical procedure proposed, there is always the possibility of intra-operative or post-operative complications; These include liver abscesses, surgical wound infections, hemorrhages, and fistulas in the digestive system. This case report purpose is to report a rare case of liver abscess after a laparoscopic bariatric surgery.

Keywords: Bariatric Surgery, Liver Abscess, Gastric Bypass.

1 INTRODUCTION

The number of overweight and obese individuals is significant in our country. The frequency of weight gain has increased with age for both men and women. The number of overweight individuals

(Body Mass Index - BMI > 25) exceeds 55% of the population; and obese (BMI > 30) is greater than 20% in general. (Brazil, 2020). The increase in the number of individuals with obesity reflects the increase in the frequency of bariatric surgeries performed in our country. Currently, bariatric surgery is possible for patients with a BMI > 30, as long as it meets the requirements of specialist societies and regulatory guidelines. (Abeso, 2016).

Laparoscopic bariatric surgery allows less invasion of the patient, not completely exposing the abdominal cavity. The means of access to the abdominal cavity to perform the surgery is through small incisions in the abdomen that allow complete access to the patient's abdominal and pelvic cavity. Among the benefits of this technique are a shorter time to perform the surgery, associated with a reduction in postoperative recovery time and a lower pain index. Concomitantly, there are negative points of this technique, such as the preparation of pneumoperitoneum, which can influence the patient's lung capacity during surgery, especially for those who have an underlying disease that affects the respiratory system. (Fernandes et al., 2021)

The presentation of liver abscess after laparoscopic surgery is rarely reported in the literature. Especially in cases that are related to bariatric surgery. Liver abscess may present due to contiguity of the surgical site or even related to hematogenous dissemination. Surgeries that address the bile ducts are associated with an increased rate of infectious complications due to local manipulation, and sometimes may even be related to colonic bacterial translocation. (Abeso, 2016) The objective of this article is to report the case of a patient in the postoperative period of laparoscopic bariatric surgery, complicated with pyogenic liver abscess.

2 METHODOLOGY

The present work is a Clinical Scope Study, in the form of a Case Report, as described by Merchán-Haman & Tauil (2021). According to Pereira et al. (2018), this report presents a qualitative approach; with quantitative input as presented in the introduction. The information presented was collected from medical records and complementary exams performed by the patient, as well as from the bibliographic review of books in the classic medical literature, and information obtained from electronic databases such as SciELO, PubMed and LILACS, in addition to the information provided by the Guidelines of Scientific Societies that address the topic in question.

Ethical and legal aspects were considered by means of explicit consent on the part of the patient to carry out this report. The signing of the Free and Informed Consent Form (ICF) was used to formalize the common agreement to carry out this report. All possible measures to maintain patient privacy and confidentiality have been taken, in accordance with resolution 466/2012 of the National Health Council. This account developed as well, in accordance with the Declaration of Helsinki and its established ethical principles.

3 CASE REPORT

Female patient, 42 years old, hypertensive, diabetic, hypothyroid, BMI = 45. She underwent laparoscopic bariatric surgery with gastroplasty associated with Roux-en-Y gastric bypass and umbilical herniorrhaphy. The procedure was performed without intercurrences, and the patient was discharged for outpatient follow-up according to the protocol of the assistant unit.

Patient returns to the health unit on the 16th postoperative day complaining of abdominal pain, fever, nausea, hyporexia; which started approximately on the 13th postoperative day. The patient presented tachycardia and fever on admission examination associated with diffuse abdominal pain, more intense in the upper abdomen.

Laboratory tests and tomography of the abdomen indicated the presence of a liver abscess with a large collection and a liquid-gaseous level located in the left hepatic lobe, measuring 18.1 x 8.4 x 10.4 cm, consistent with approximately 830 ml of volume; associated with a small volume of free fluid in the pelvis.

Laboratory tests indicated the presence of significant anemia, with no indication for blood transfusion; Significant leukocytosis associated with left shift. Hepatic canalicular enzymes showed slight alterations, as well as INR. Hepatic transaminases within normal range. Other inflammatory markers showed significant changes. Blood cultures collected at admission showed no change in results.

The patient underwent percutaneous drainage of the hepatic pocket by interventional radiology with positioning of the drain in the absceded pocket. Associated with empirical antibiotic therapy guided by the unit's hospital infection control team - piperacillin + tazobactam for seven days in hospital.

The patient progressed with daily improvement of the complaints presented on readmission. The patient had an adequate oral diet. A drain positioned in the abscess pocket showed an initial flow rate of 50 ml and a progressive reduction during the days of hospitalization.

The patient was discharged from the hospital with oral antibiotic therapy (metronidazole and ciprofloxacin) and outpatient follow-up. Currently, the infectious condition has been resolved, and the patient is undergoing postoperative follow-up, with weight loss expected for the method used, with no recurrence of new infectious episodes.

4 RESULTS AND DISCUSSION

Obesity is a worldwide epidemic (Alves et al., 2022) and has become a well-defined disease that triggers and aggravates multiple morbidities, such as psychiatric, endocrine, and metabolic, also related to reduced longevity and impaired quality of life and health in general. (Acquafesca et al., 2015) Attention should be paid to the fact that this problem is increasingly propagated in childhood and

adolescence, tending to last into adulthood, from 13 to 15 years of age are the age groups in which significantly higher prevalences of pre-obesity and obesity are detected, respectively. (Ferreira et al., 2012)

It is known that the genetic factor alone is not the cause of obesity, thus, factors that increase the risk for the development of comorbidity, such as sedentary lifestyle, high consumption of carbohydrates and saturated fats, are ratified. (Azevedo & Brito, 2012)

Multiple therapies for obesity have been stimulated, from lifestyle changes, cognitive-behavioral therapy, drug therapy and bariatric surgeries, which in turn stand out mainly for the possibility of lasting effects, with significant weight loss and high potential for long-term maintenance. (Wolfe et al., 2016)

The treatment of obesity, therefore, is a multidisciplinary process, and pharmacological therapy should act as an adjuvant factor, which should be associated with lifestyle changes, taking into account the comorbidities and conditions present. (Eisenberg et al., 2022)

Considering the increasing number of bariatric surgery practices, it is necessary to systematize and discuss its indications and complications of the procedure. (Jaacks et al., 2019) In general, the surgery allows significant weight loss, either due to its disabsorptive or restrictive nature, in addition, it provides greater contributions to glycemic control and metabolic improvement in patients with DM2. (Fagundes et al., 2022)

Non-surgical programs should be approached as initial therapy, and surgical treatment should be carefully indicated through a previous multidisciplinary evaluation. The medical criteria for the surgical approach are based mainly on the patient's morbidity directly related to weight, in view of this, a body mass index (BMI) > 40 kg/m2, a factor that presents a very high risk for associated diseases, or BMI > 35 kg/m2 accompanied by related comorbidities, such as DM2, hypertension, dyslipidemia, obstructive sleep apnea syndrome, cardiovascular diseases, asthma, hepatic steatosis and polycystic ovary syndrome, BMI 30 – 34.9 kg/m2 associated with type II Diabetes Mellitus. BMI 30 – 34.9 who have failed to achieve adequate weight control or maintenance of weight loss are criteria for surgical indication. (Abeso, 2016) In addition, the patient must have failed previous clinical therapy, with multidisciplinary support for at least 2 years. (Khera et al., 2016)

Contraindications to surgical treatment include untreated severe depression, uncontrolled eating disorders, severe heart disease with risk to the use of anesthetics, and severe coagulopathy, there are controversial guidelines regarding the possibility of performing surgical treatment at extremes of age, in adolescents under 16 years of age and elderly over 65 years of age. (Mechanick et al., 2019)

Roux-en-Y gastric bypass is a widespread procedure, which consists of the creation of a new gastric reservoir, with about 20 ml remaining, in addition to the resection of the proximal jejunum and anastomosis of the gastric reservoir with the remaining part of the jejunum. (Nora, 2016) It is,

therefore, a restrictive method, which aims to give the patient a feeling of satiety after feeding in small portions, in addition, a disabsorptive character is also observed, since there is separation of food transit and the path of biliopancreatic secretions. Conversion to open surgery is reported to be between 0 and 5.7%. (Nora, 2016)

However, surgeries cause side effects, such as nutritional deficiencies, often inherent to the structural changes that the procedure generates in the gastrointestinal tract, which justifies the need to prescribe multivitamins and minerals, especially iron, thiamine, calcium, and vitamins A, E, D, and B12. (Jammah, 2015) In addition, rapid weight loss after surgery is a risk factor for the formation of cholelithiasis, potentially responsible for pancreatobiliary complications, which implies the indication of prophylactic cholecystectomy. (Rosini et al., 2012)

In this scenario, it is observed that there may be important complications secondary to the procedure, being early up to 30 days postoperatively. (Neto et al., 2017) These include bleeding, digestive fistulas, intestinal obstruction, pulmonary thromboembolism, and deep abdominal wall infections; are late, such as incisional hernia or cholelithiasis due to significant weight loss, in addition to metabolic complications such as dumping. (Scarpellini et al., 2020)

Liver abscess (HA) can be understood as a localized suppurative collection encapsulated by fibrous material, it is a rare condition, especially in first world countries, with a higher prevalence in males, between the third and sixth decades of life, and has as risk factors alcoholism, populations in endemic areas, immunocompromised, associated with morbidity and mortality rates of 2 to 12%, which become increasingly important depending on the delay in its diagnosis, and therefore its early identification and management are intrinsic to the appropriate medical management. (Wysocki et al., 2023)

Currently, there are several ways of classifying HA, among them according to the number of lesions caused to the liver, the degree and depth of hepatic involvement, and etiology. (Rahimian et al., 2004) Most are caused by bacteria or amoebas, most notably *Entamoeba hystolitica*. Other pathogens may also be associated with secondary infections, such as by parasites and fungi; They may even be related to the complication of surgical procedures, whether laparoscopic or open surgery. (Fagundes et al., 2022)

Initiating diagnostic investigation through imaging tests such as ultrasonography may be the initial step; an examination that will show hypoechoic masses, in addition to the absence of central Doppler perfusion (Morphological characteristics) (Bachler et al., 2016). In addition to the imaging test, aspiration puncture can be used, either with the intention of microbiological analysis, or for therapy through percutaneous drainage, as an initial therapy associated with antibiotic therapy, reducing the period necessary for resolution of the infectious condition and reducing the patient's hospitalization time. (Ahmed et al., 2020)

5 CONCLUSION

Laparoscopic surgery represents an important advance in patient care, however, despite improving postoperative outcomes, it is not without complications. Although uncommon and rarely reported in the literature, liver abscesses can occur regardless of the care, medications, techniques, and good practices provided to avoid complications. Thus, one should be vigilant during the postoperative period for the early diagnosis of this complication and the institution of appropriate measures for each situation encountered.

In order to better understand the complications associated with bariatric surgery, especially liver abscesses, it is essential that new studies be carried out with a focus on laparoscopic surgeries. New case reports associated with a systematic review of the literature are needed for a better understanding of this complication and the consequent development of tactics to prevent the occurrence of abscesses.

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