

LIVER ABSCESS: THE ROLE OF LAPAROSCOPIC TREATMENT IN IMMUNOSUPPRESSED PATIENTS

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Abstract: The spread of cancer treatments and the high incidence of chronic diseases resulted in an increase in the occurrence of opportunistic infections in immunocompromised patients. Clinical symptoms are often nonspecific and can make definitive diagnosis difficult. The basis for the treatment of liver abscesses has been minimally invasive, with percutaneous drainage in most cases or laparoscopy, leaving conventional surgery reserved for selected cases. Laparoscopic drainage of liver abscesses may be an alternative in services without 24-hour ultrasound, or complementary to ultrasound, offering the advantage of direct visualization, differential diagnosis, and drainage-associated debridement. Case description: Diabetic patient, 62 years old, reporting occasional abdominal pain for 4 days, associated with confusion in the period. On physical examination, there was no abdominal pain, tachycardia and no other changes. Laboratory tests with marked leukocytosis and high CRP. Tomography showing a single cystic image, with heterogeneous water content and level, affecting segments V, VI, VII and VIII. We opted for videolaparoscopy drainage, with 600 ml of purulent-looking fluid, debridement of devitalized liver tissue and associated cholecystectomy. The patient evolved well and was discharged on the 4th postoperative day. Conclusion: In immunosuppressed patients, the best treatment is related to less surgical and metabolic trauma. Laparoscopy allows the visualization of possible associated causes (gallbladder, tumor, abdominal infections), in addition to draining and removing devitalized tissue, which prolongs the inflammatory phase and can maintain foci of infection. Clinical Importance: The evaluation of the benefit of each procedure must be analyzed, proposing the most appropriate treatment for each clinical condition, opening the possibility of associating the procedure (exclusive

or assisted laparoscopy) as a definitive or complementary treatment of this pathology in immunocompromised patients.

Keywords: Liver abscess; immunosuppression; laparoscopy; infection.

INTRODUCTION

The better efficiency in cancer treatments associated with better early diagnosis has promoted an increase in the incidence and survival of chronic diseases. This reality allows the occurrence of more opportunistic diseases and complications of common conditions that can become serious in immunocompromised patients.

The prevalence of liver abscess varies according to the region and is mainly associated with portal circulation, which is the main route of dissemination due to the higher occurrence of diseases of the lower gastrointestinal tract. In addition, biliary tract infections represent the second most common cause, due to the tissue continuity and incidence of this pathology.

Clinical symptoms are often nonspecific and definitive diagnosis can be difficult to establish, due to the variety of presentations and there is a need for imaging for confirmation and treatment, including surgical planning.

The mainstay of treatment for liver abscesses has been minimally invasive, with percutaneous drainage in most cases, leaving laparoscopy reserved, and conventional surgery for cases where there is another associated surgical condition. Laparoscopic drainage of liver abscesses, regardless of associated comorbidities, can be an alternative in services without 24-hour ultrasound, offering the advantage of direct visualization, intraoperative differential diagnosis and debridement associated with drainage.

CASE REPORT

Diabetic patient, 62 years old, reporting

occasional abdominal pain that started 4 days ago, associated with confusion that started on the day of arrival at the service. On physical examination, there was no abdominal pain, tachycardia and no other changes in vital signs. Laboratory tests with marked leukocytosis and elevated CRP. Tomography showing multiple cystic image (2 coalescing foci), containing heterogeneous material and air-fluid level, of approximate sizes 5cm and 12cm, compromising segments V, VI, VII and VIII.

Due to the absence of 24-hour ultrasound in the service, the patient's vulnerability and characteristics of the lesion, laparoscopic drainage was chosen. Intraoperatively, adherence of adjacent structures such as the omentum and duodenum adhered to the gallbladder and lower edge of the liver was observed. The gallbladder was quite thickened, with signs of inflammatory infiltration of the wall (swollen and thickened), without stones. Cholecystectomy was performed due to the extension of the inflammatory/infectious process due to probable contiguity. A puncture was performed in the topography of the collection, presenting with bulging of the parenchyma in addition to alteration of the local perfusion pattern, observing the output of 600 ml of purulent-looking liquid, followed by cleaning with saline solution, mechanical removal of debris with gauze, dissection forceps and scissors, completing debridement of devitalized liver tissue. Externalization of a tubule-laminar drain positioned in the region of the drained abscess pocket.

Intraoperative antibiotic therapy was started and, after the surgical procedure, there was daily follow-up of the patient who had a progressive decrease in drain output, control of the underlying diseases (diabetes mellitus), significant clinical improvement, improvement in laboratory tests, being discharged on the 4th postoperative day.

DISCUSSION

The minimally invasive therapeutic capacity of laparoscopic treatment offers minimal trauma, associated with better surgical cleaning, enabling the removal of necrotic material and fibrin that are most often present in localized infectious processes. In studies such as the one by LUBLIN et al. (2002), who studied a series of cases of liver abscess in patients with immunosuppressive condition (Chronic Granulomatous Disease), 135 patients with abscess were included and, of these, most were treated with local debridement and reserved percutaneous drainage, in most cases, for recurrent abscess in reoperation treatments.

This association of characteristics allows a better approach to the immunosuppressed patient, as the need for new drainage can increase the length of hospital stay and increase the time in the inflammatory phase. This idea corroborates the study TAN et al. 2005 that compares percutaneous treatment and surgical drainage (laparotomy) in abscesses 5 cm or larger. The best postoperative results were achieved in patients who underwent surgical drainage, with the percutaneous drainage group evolving with a greater need for re-approach. Thus requiring an increase in the length of hospital stay, which indirectly reflects on the increase in the cost of treatment for each patient, in addition to the damage due to the delay in returning to an active economic life.

ADVANTAGE OF LAPAROSCOPY IN RECURRENT DRAINAGE

Studies such as the one by Mohsen et al. (2002) show 10 years of experience in the management of liver abscess, present data of surgical treatment in only 7 patients in a total of 65 patients. This small number is explained as a probable bias due to the surgical indication having occurred in patients unable to undergo

treatment by aspiration puncture or catheter drainage. However, in the population studied, biliary causes were the second cause, with no association with immunosuppressed patients.

In the immunosuppressed (diabetic) patient diagnosed with acute cholecystitis (Grade I, II or even III (in selected patients) and ASA I, II (and some even ASA III), cholecystectomy seems to be a feasible and even necessary procedure in association with drainage of the abscess, as the two-stage treatment (image-guided drainage followed by cholecystectomy) could cause gallbladder complications in acute inflammation/infection, such as perforation, necrosis, fistula, increasing and worsening the inflammatory and infectious process. Tokyo 2018, studies have observed that surgery for patients classified as Grade III is feasible, reserving percutaneous cholecystostomy for cases where the patient does not have the clinical and hemodynamic conditions for a major procedure. In this case, patients ASA III or higher may be beneficial to aspiration puncture of the abscess and associated drainage of the gallbladder (cholecystostomy), due to a clinical condition that presents high risks of a procedure treatment under general anesthesia and longer surgical time.

The proposal of the case described, as a minimally invasive treatment modality for liver abscess, specifically refers to a condition (immunosuppression) and a population (diabetics) that, in most cases, present complications in the non-operative treatment of acute cholecystitis.

ONE-TIME OPERATIVE TREATMENT

Even with surgical treatment, the diabetic patient already has more postoperative complications. Both minor complications such as surgical site infections and major cardiovascular events were more common in the diabetic subgroup ($P=0.0254$), as

well as association with preoperative status and baseline cardiovascular comorbidities. In these immunosuppressed patients with complications from bile duct disease, laparoscopic cholecystectomy and, by extension, laparoscopic drainage of abscesses of biliary origin, may be safe procedures that provide better results, reducing the risk of re-approach, especially in selected patients.

The laparoscopic procedure also has less immunosuppressive effect when compared to the open procedure for acute cholecystitis. The impact on the immune system is lower in patients undergoing videolaparoscopy, but there is no consistent evidence regarding the benefit of videolaparoscopy over percutaneous drainage in the treatment of immunosuppressed patients. However, significant rates of re-approach in these patients - initially treated percutaneously - suggest that laparoscopic management, in a single stage, can be effective and with less morbidity in services without a 24-hour interventional radiology structure in patients without contraindications to general anesthesia.

CONCLUSION

In immunosuppressed patients, the best treatment is related to less surgical and metabolic trauma. This translates into the use of less invasive procedures that can resolve without the need for a new procedure, whether invasive or not (AYDIN, et al. 2015).

Laparoscopy allows the visualization of possible associated causes (diseases of the biliary tract, tumor and abdominal infections), in addition to draining and removing devitalized tissues, which prolong the inflammatory phase and may maintain active foci of infection.

The indication of each procedure must be evaluated in terms of the benefit it offers, proposing the most appropriate treatment for

each clinical condition, opening possibilities for the association of procedure (exclusive or assisted laparoscopy) as a definitive or complementary treatment of this pathology in immunocompromised patients, whose minimal trauma already reflects quite aggressively on the metabolic endocrine response.

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