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Laparoscopic Subtotal Cholecystectomy: A Surgical Alternative to Reduce Complications in Complex Cases☆

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ABSTRACT

Introduction: Laparoscopic cholecystectomy is a common procedure in general surgery, and in complex cases it is important for the surgeon to know all the alternatives with low associated morbidity. Laparoscopic subtotal cholecystectomy should be considered as an option when a critical view of safety cannot be obtained, because it has a low complication rate and gives the advantages of minimally invasive surgery.
Methods: Retrospective study of laparoscopic subtotal cholecystectomies in an eight years period.
Results: A total of 1059 laparoscopic cholecystectomies were performed; 22 were subtotal cholecystectomies, without conversion. Biliary fistula (9%) and intraabdominal collections (4.5%) were the most common complications described. No iatrogenic bile duct injuries or deaths were reported. Our follow-up period was 32 months, no recurrences were reported.
Conclusions: Laparoscopic subtotal cholecystectomy is a safe and effective procedure. It should be considered as an option in complex cases.

Colecistectomía laparoscópica subtotal como alternativa quirúrgica segura en casos complejos

Palabras clave:
Colecistectomía subtotal
Laparoscopia
Visión crítica

RESUMEN

Introducción: La colecistectomía laparoscópica es uno de los procedimientos quirúrgicos realizados con más frecuencia a nivel mundial en el campo de la cirugía general, por lo que es fundamental que el cirujano conozca las diferentes alternativas al momento de enfrentarse con un caso complejo. Bajo esta premisa, es importante considerar la colecistectomía laparoscópica subtotal como una opción, cuando después de una adecuada disección, no se logra identificar las estructuras anatómicas y no se obtiene la visión crítica de seguridad.

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Este procedimiento cursa con baja morbilidad y con las ventajas ampliamente conocidas de la cirugía mínimamente invasiva.

Métodos: Estudio retrospectivo de pacientes a quienes se les realizó colecistectomía laparoscópica subtotal en un periodo de 8 años.

Resultados: Se realizaron 1.059 colecistectomías laparoscópicas. De estas, 22 correspondieron a colecistectomías subtotales. No se registraron lesiones de vía biliar ni conversiones. Las complicaciones más frecuentes fueron la fístula biliar (9%) y la colección intraabdominal (4,5%). No hubo mortalidad asociada al procedimiento. Durante un periodo de seguimiento promedio de 32 meses, no se observó recurrencia de sintomatología.

Conclusiones: La colecistectomía laparoscópica subtotal es un procedimiento efectivo, seguro y reproducible. Debe ser considerada como una opción en casos complejos.

Introduction

Since the introduction of laparoscopic cholecystectomy in the field of general surgery and our understanding of the many advantages it offers, this approach has quickly established itself as the treatment of choice in patients with cholelithiasis, as it is considered an effective procedure and with low morbidity and mortality rates.[1–4]

During laparoscopic cholecystectomy, surgeons are often faced with complex situations, such as Mirizzi's syndrome, severe cholecystitis and liver cirrhosis, where anatomical structures cannot be properly identified and the critical view of safety cannot be achieved. This leads to greater surgical risk and the possibility of bile duct injury.[5–7] In these cases, the following options have been proposed: conversion of the procedure, cholecystostomy or subtotal laparoscopic cholecystectomy.[8,9]

Conversion to open surgery resolves the problem in a single operation. However, it does not guarantee adequate identification of anatomical structures, and therefore does not eliminate the risk of injury to the bile duct. Furthermore, with conversion, the advantages of laparoscopic surgery are lost. Cholecystostomy can be done laparoscopically, but the problem is not resolved in a single operation, so the patient must undergo another surgical procedure. On the other hand, laparoscopic subtotal cholecystectomy not only provides the advantage of maintaining the benefits of minimally invasive surgery, but it also resolves the problem in a single procedure, making this technique an ideal tool in complex cases.[8,9]

This procedure has been previously described as a safe alternative in cases of complex cholecystectomies, where the critical view of safety cannot be achieved.[8–22]

In this study, we report the experience of our department with this procedure.

Methods

This is a retrospective study that included patients with indications for laparoscopic cholecystectomy but who underwent laparoscopic subtotal cholecystectomy because of intraoperative findings over a period of 8 years in the Surgery Service III at the Caracas University Hospital. Excluded from the study were those patients whose initial approach was by laparotomy and who underwent an additional surgical procedure during the same operation.

Subtotal cholecystectomy consists of the removal of most of the organ, usually with dissection at the infundibulum.[10] According to the classification by Henneman et al., there are four types depending on the preservation of the posterior wall, the area of the dissection and the management of the remaining structures. Type A is based on preserving the posterior wall, which would be attached to the gallbladder bed, without closing the gallbladder remnant; type B involves preserving the posterior wall by closing the gallbladder remnant; type C involves making the dissection at the infundibulum of the gallbladder, with closure of the gallbladder remnant; similarly, in type D, the division is made at the area of the infundibulum of the gallbladder, although it is not closed[8] (Fig. 1).

Description of the technique: The patient is placed in a supine position, with the laparoscopic tower located towards the right shoulder. The surgeon and the camera assistant stand on the left side, and the assistant on the right side. Pneumoperitoneum is created following the technique chosen by the surgeon, and trocars are placed. The trocar in the umbilical region is occupied by the camera; the second trocar is placed in the epigastrium; the third trocar along the mid-clavicular line approximately 2 cm below the ribcage. These latter two trocars are used by the head surgeon, while the last trocar, placed along the anterior axillary line below the ribcage, is for the assistant. However, it is necessary to mention that these latter two can vary according to the criteria of the surgeon after defining the location of the gallbladder.

The procedure begins with the traction of the bottom of the gallbladder in the cranial direction towards the right shoulder of the patient to expose the infundibulum and initiate the dissection and identification of the structures of the cystohepatic triangle. The infundibulum of the gallbladder is identified and lateral traction is performed; afterwards, the peritoneum is dissected on the anterior and posterior sides of the gallbladder, with release of the infundibulum from the gallbladder bed; with this maneuver, more lateral traction is achieved, which is essential to achieve the critical view of safety. If critical view is not possible, division is carried out at the infundibulum with monopolar or ultrasonic energy (depending on availability). The absence of gallstones in the gallbladder remnant is confirmed under direct vision, then