

Laparoscopic Cholecystectomy without overnight stay in an Ambulatory Surgery Unit

C. Morgado^{1,2}, D. Cavadas¹, S. Pina¹, D. Andrade^{1,2}, T. Colaço^{1,2}, P. Tavares^{1,2}

Abstract

Laparoscopic cholecystectomy (LC) is nowadays considered the goldstandard procedure for the treatment of lithiasic gallbladder pathology and gallbladder polyps. Its performance in an ambulatory setting is being done in an increasingly number of centers. In our ambulatory Surgery Unit (ASU) we do it without overnight stay.

Keywords: Laparoscopic cholecystectomy, Ambulatory surgery.

Authors' Addresses: ¹Department of Surgery, Curry Cabral Hospital, Central Lisbon Hospital Center, Lisbon, Portugal.
²Ambulatory Surgery Unit, Curry Cabral Hospital, Central Lisbon Hospital Center, Lisbon, Portugal.

Corresponding author: C. Morgado *Email:* carolinammorgado@gmail.com

In this article we intend to describe our experience in the treatment of 355 patients focusing on the special care taken in order to assure the success of the procedure as well as the safety of our patients.

Introduction

Lithiasic gallbladder pathology is one of the most common clinical entities in Western countries, affecting 10–15% of the adult population [1]. Laparoscopic cholecystectomy (LC) is currently accepted as the gold standard procedure for the treatment of lithiasis or vesicular polyposis. Numerous studies indicate that, with adequate patient selection, according to a series of inclusion and exclusion criteria, the outpatient LC is an effective and safe procedure [1–6].

The fear of many surgeons and patients, coupled with the lack of defined protocols, is the reason why it is not practiced more often.

With this article we intend to contribute with a further favorable description regarding the practice of ambulatory LC and in our case even without an overnight stay, based on the experience acquired in the treatment of 355 patients in our ASU.

Material and Methods

We analyzed retrospectively the experience that we had in our ASU of the Central Lisbon Hospital Center from June 2009 to December 2016.

During this period, 355 patients were submitted to LC. The presence of associated symptoms (dyspepsia, biliary colic, episodes of uncomplicated cholecystitis) is an essential condition for surgical indication in cases of vesicular lithiasis. In relation to vesicular polyposis, only polyps larger than 1 cm or with recent growth are considered to be surgical candidates [7].

Exclusion criteria for ASU treatment are patient refusal, cases of previous complications of biliary lithiasis such as pancreatitis or cholecystitis with criteria of severity, suspicion of choledocholithiasis, patients with ASA III not compensated or ASA ≥ 4 .

All procedures are initiated laparoscopically with pneumoperitoneum, usually performed by closed method with a Veres needle (umbilical or left hypochondrium), usually 12 mm

Hg and with 3 or 4 working ports. The method of positioning the surgical team is both French and American, according to the primary surgeon who practices it.

The double ligation of the cystic artery and duct is done with clips, usually 5 mm and the placement of drainage in the Morrison space is optional, being more frequent in situations of more laborious and slightly more hemorrhagic dissections.

Local analgesia is always performed with 0.75% ropivacaine infiltration at the working port locations, prior to the incision, in a context of multimodal analgesia.

Patients are also submitted to prophylaxis of postoperative nausea and vomiting with droperidol, dexamethasone and ondasetron.

The patient is only discharged from the UCA if he fulfills in full the PADSS criteria (Postanaesthetic Discharge Scoring System, Table 1).

The LC's are the first surgeries scheduled of the day in order to guarantee a minimum of 6 hours of postoperative recovery in the ASU [1].

The postoperative follow-up of the patients was done at 24 hours by telephone survey, evaluation consultation on the 7th day and after one month.

Results

The mean age of the patients was 47 years, with a minimum age of 20 and maximum of 77 years. The gender distribution was 290 (81%) female and 65 (19%) male, being in agreement with the literature [3]. The distribution according to the ASA was as follows: ASA I - 39 (10.9%), ASA II - 299 (84.2%), ASA III - 17 (4.7%).

The most frequently observed comorbidities were: obesity, arterial hypertension, dyslipidemia.

Regarding obesity, it should be noted that 30 patients (8.4%) were operated on after previous bariatric surgery (bypass or gastric sleeve). This type of surgery increases the incidence of vesicular lithiasis because the rapid weight loss catabolism that enhances the bile with cholesterol, favors precipitation of crystals and the genesis of calculi, aggravated by biliary stasis.

Table 1 Postanesthetic Discharge Scoring System (PADSS).

| Vital signs | |
|-------------------------|----------------------------------|
| 2 | Whitin 20% of preoperative value |
| 1 | 20%-40% of preoperative value |
| 0 | 40% of preoperative value |
| Activity, mental status | |
| 2 | Oriented and steady gait |
| 1 | Oriented or steady gait |
| 0 | Neither |
| Pain, nausea, vomiting | |
| 2 | Minimal |
| 1 | Moderate |
| 0 | Severe |
| Surgical bleeding | |
| 2 | Minimal |
| 1 | Moderate |
| 0 | Severe |
| Intake and output | |
| 2 | Per os fluids and voided |
| 1 | Per os fluids or voided |
| 0 | Neither |

The mean time of the interventions was 64 minutes.

Unscheduled admissions on the same operative day were 24 (6.7%). The reasons were: the need for conversion to laparotomy - 2 (0.5%), difficulty in controlling pain - 6 (1.7%), difficulty in controlling nausea and vomiting - 11 (3%), surgical procedures more laborious and time-consuming requiring a higher degree of postoperative surveillance - 4 (1.1%) and one case of subcutaneous extravasation of drugs through vascular access (0.3%).

The need for immediate conversion to Kocher's laparotomy described in 2 cases was due in one case to difficult-to-control hemorrhage and in another to difficulty in identifying anatomical structures. These patients were discharged after 48 h of hospitalization, clinically well and there were no complications at postoperative follow-up.

Also, the 18 patients hospitalized for difficulty in controlling pain, nausea and vomiting and the case of subcutaneous extravasation of drugs were discharged after a maximum of 48 hours fully recovered and without any interurrence.

Of the 4 more laborious LC situations that required hospitalization for surveillance, 2 were discharged on the following day without complications, and 2 needed reoperation with laparotomy.

In one case, reoperated 12 hours after the first surgery due to haemodynamic compromise and abundant hepatic abdominal drainage, a haemoperitoneum was observed. The second operation consisted of draining the haemoperitoneum, verification of the absence of active bleeding and application of floseal glue in the hepatic bed.

The second patient was re-operated on the 4th day after LC, for biloma causing the patient persistent pain, elevation of inflammatory parameters and an image of subhepatic collection in CT. Intraoperatively, a small leak was detected in the cystic duct and, after confirming that there were no changes in the biliary tree by intraoperative cholangiography, clips were placed on the cystic duct and drainage was performed. These two cases had favorable evolution without subsequent complications.

One patient required readmission after surgery: The patient went to the emergency department 2 days after discharge from the ASU with complaints of abdominal pain. After the detection of voluminous subcutaneous emphysema and pneumoperitoneum, he was laparotomized and faecal peritonitis with a colonic injury in the vicinity of the trocar port was found. After peritoneal toilet, he underwent sigmoidostomy. He was discharged on the 13th postoperative day. In the meantime, the intestinal tract has already been reconstructed, without further complications, and the patient is clinically well.

In the follow-up evaluation of the 355 patients, even the 3 cases with more severe complications previously described, are fully recovered.

No mortality was recorded.

Conclusions

From the analysis of the results obtained, we can conclude that performing a laparoscopic cholecystectomy in an ambulatory surgery unit without an overnight stay is a safe option, and a high rate of discharge (93%) was achieved in this study.

Although some complications were observed, they were very small in number (0.8%) and had timely treatment with complete resolution in each situation and no case of mortality.

According to the literature, the incidence of major complications after LC is about 1-5%, with most situations (hemorrhage, biliary lesion or intestinal perforation) being diagnosed at the time of surgery or 24 to 36 hours after surgery, often when the patient has already been discharged even in conventional surgery programs with scheduled hospitalization [2,3,6]. Thus, unscheduled patient admission, which fully meets the high PADSS criteria, does not add any effective safety. On the contrary, failure to comply with one of the criteria is a mandatory condition to motivate hospitalization, in order to guarantee patient safety, which is always our main concern.

Also essential is to ensure scrupulous compliance with the conditions of inclusion and exclusion in the patients' proposal for intervention in an outpatient surgery environment, as previously mentioned.

In order to minimize unplanned admissions, potential complications should be avoided and measures such as the inclusion of multimodal analgesia models and prophylaxis of nausea and vomiting should be taken [4]. These are the main causes of unscheduled admissions², also in our experience.

The practice of this procedure in ambulatory surgery allows an increase in the surgical activity that is not limited by the number of hospital beds, which are often unavailable, considerably reducing costs (up to 35% [1]), never neglecting the guarantee of total safety for patients [2].

In our particular case, the same-day hospital discharge rate of 93% was even higher than that reported in some studies [4]. Finally, the degree of satisfaction of the patients which is indeed very high.

References

1. Teixeira UF, Goldoni MB, Ceccon PN et al. Ambulatory Laparoscopic Cholecystectomy is safe and cost-effective: a Brazilian single center experience. *Arquivos de Gastroenterologia* 2016;**53.2**:103-7.
2. Docobo Durántez F, Arance García M, Navas Cuéllar A et al. Day surgery laparoscopic cholecystectomy: comparative analysis in two consecutive periods in a cohort of 1132 patients. *Ambulatory Surgery* 2013;**19.4**:121-5.
3. Gurusamy K, Junnarkar S, Farouk M, Davidson BR. Meta-analysis of randomized controlled trials on the safety and effectiveness of day-case laparoscopic cholecystectomy. *British Journal of Surgery* 2008;**95.2**:161-8.
4. Psaila J, Agrawal S, Fountain U et al. Day-Surgery Laparoscopic Cholecystectomy: Factors Influencing Same-Day Discharge. *World Journal of Surgery* 2008;**32(1)**:76-81.
5. Roque R, Freitas A, Pina A et al. Colectistectomia Laparoscópica, Cirurgia de Ambulatório. *Acta Medica Portuguesa* 2007;**20**:407-12.
6. Pérez M., Villarreal G., Cumplido P., Obregón R. Comparative study of ambulatory laparoscopic cholecystectomy versus management of laparoscopic cholecystectomy with conventional hospital stay. *Cirugía Española* 2013;**91(7)**:424-31.
7. Andrén-Sandberg A. Diagnosis and Management of Gallbladder Polyps. *North American Journal of Medical Science* 2012;**4(5)**:203-11.