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Research Article

FIRST EXPERIENCE WITH OUTPATIENT LAPAROSCOPIC CHOLECYSTECTOMY IN MOROCCO

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ABSTRACT

Laparoscopic cholecystectomy is the standard treatment for symptomatic vesicular lithiasis. This intervention is done on ambulatory setting in North America and Europe but no experience was reported in Morocco.

The aim of this study is to report the results of our experiment, in order to evaluate the feasibility of this procedure in our context.

Methods: This is a prospective descriptive study performed at the General Surgery Department of the Avicenna Military Hospital in Marrakesh during a 10-months period from February 2018 to November 2018.

Results: During the period, 122 laparoscopic cholecystectomies were performed. Among them N = 55 (45%) responding to the inclusion criteria were scheduled outpatients. there were 45 women (82%) and 10 men (18%). The average age was 48.56 years old. 31 patients (56.36%) had at least one risk factor for nausea or vomiting. 35 patients (63.6%) were ASA 1, 16 patients (29.1%) ASA 2 and 4 patients (7.3%) ASA 3. 80% of the patients were operated under general anesthesia and 20% under spinal anesthesia. The average operative time was 41.49 min. the missed exit rate was 5.45%. The rate of unplanned consultations was 9.6%. One patient (1.9%) was rehospitalized on D2 for postoperative peritonitis and was reoperated.

Conclusion: Our study demonstrates the feasibility of the OPLC in our context and could be an accelerator for the development of outpatient surgery with the establishment of a legislative framework and adequate infrastructure to this procedure; this would optimize our health system

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INTRODUCTION

In 1985, Muhe performed the first laparoscopic cholecystectomy [1]. Since then, this approach has become the reference for the management of symptomatic vesicular lithiasis. In 1990, it was established that this surgery can be done in an outpatient setting, that is, without spending a night in the hospital [2]. The first Outpatient laparoscopic cholecystectomy experiments were performed in North America [3,4], with a significant reduction in the cost of the intervention [5,6], then it was the turn of some European hospitals (first Scandinavian) to adhere to this procedure [7,8]. For our country, the standard for cholecystectomy remains a conventional hospitalization and only minor surgeries are considered eligible for an outpatient procedure. This is certainly due, on the one hand, to the delay in the development of outpatient surgery in our country and on the

other hand, to the fear of complications when leaving the hospital.

At the Avicenna military hospital in Marrakech (AMH), Outpatient laparoscopic cholecystectomies have been done since February 2018. The aim of this study is to report the organization and the results of our experience, in order to evaluate the benefits of this protocol and study its feasibility in our context.

PATIENTS AND METHODS

Location and duration of the study

This is a descriptive prospective study performed at the General Surgery Department of the Avicenna military hospital in Marrakesh during a 10-months period from February 2018 to November 2018.

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Patients

Inclusion criteria

- ✓ Informed consent of the patient.
- ✓ An accurate diagnosis of simple vesicular lithiasis.
- ✓ An ASA \leq 3.
- ✓ A preanesthesia consultation made at the latest 1 month before the intervention.
- ✓ Residence within 100 kms of the ambulatory structure (AMH), with easy access.
- ✓ Availability of a phone.
- ✓ Ability to arrive fasting on the day of the intervention.
- ✓ Adult accompaniment available during the first 48 h.
- ✓ The possibility to come and return by private car (no taxi, no ambulance).

Exclusion criteria

- ✓ An antecedent of sus-mesocolic surgery.
- ✓ An associated lithiasis of the main bile duct.
- ✓ Suspicion of acute cholecystitis.
- ✓ ASA \geq 4 (anticoagulant therapy was not an exclusion criterion).
- ✓ An allergy to the anesthetic drugs used.

METHODS

Organization of the outpatient unit and the patient circuit

Because of the absence of specific ambulatory structure in our establishment, we used the conventional hospital structures (the staff, the operating room and the recovery rooms were common).

The outpatient surgery decision was taken at the preoperative surgical consultation, if the inclusion criteria are validated and the patient is motivated, all explanations necessary for the understanding of the procedure were given to the patient, a bilingual information guide with coordinates of the health care team was made available. The anesthesia consultation was mandatory and could cancel the outpatient procedure.

D-day, the patient arrived at the hospital fasting 45 to 60 minutes before the intervention; he was hospitalized according to the same administrative procedure as the conventional hospitalizations. After preparation in his room, the patient is taken to the operating room. Once the procedure is over, he is monitored in the post-interventional surveillance room, then, he is returned to his room at the service, and will be allowed to take an herbal tea 2 hours later. If the exit criteria are validated and checked by the surgeon and / or anesthesiologist, he is given the necessary documents (medical prescription, work stoppage, check-up appointment ...), and he can go out accompanied before 20H.

Anesthetic protocol

General anesthesia

Balanced general anesthesia was chosen; Induction was made by 3 mg / kg of Fentanyl as morphine; 2mg / kg of propofol as hypnotic and 0.6mg / kg of rocuronium as curare; maintenance of anesthesia was performed by an air / Sevoflurane mixture. An injection of 08 mg of dexamethasone, in prevention of postoperative nausea and vomiting was recommended in all patients.

Spinal anesthesia

After placing the patient in a sitting position, a median puncture at T9-T10 was made by a 27-gauge pencil-pointed spinal anesthesia needle. After exiting the cerebrospinal fluid testifying to the success of the gesture, an injection of a 7.5mg Bupivacaine 0.5% + Fentanyl 25 μ g mixture was made. The patient was then placed in a supine position. The beginning of the surgery was only allowed when a sensitive level of T4 was found.

End of intervention

After GA, the extubation of the patient was done on the operating table after complete decurarisation and awakening. Initial postoperative monitoring in the Postoperative Monitoring Room was recommended for all patients. The exit was authorized in patients under GA after obtaining an Aldrete Score of 9/10 or higher. In patients under spinal anesthesia the exit was allowed after the lifting of the motor block and absence of nausea or vomiting.

Surgical protocol

- Operator: senior surgeon or resident in surgery under his supervision (to ensure maximum safety).
- Number of trocar: unspecified (4, 3 or 2), left to the choice of the operator.

Pneumoperitoneum pressure

1. If General Anesthesia: 13-14 mm Hg.
2. If high spinal anesthesia: 12 mm Hg with progressive insufflations in stages.
 1. Technique of open coelio (systematic).
 2. No systematic gastric tube.
 3. No intraoperative cholangiography.
 4. Optimal exsufflation by manual abdominal pressure with one trocar left open.
 5. Systematic infiltration of trocar orifices with isobaric bupivacaine (5cc / incision site).
 6. Systematic instillation of diaphragmatic domes and gallbladder bed (if not bleeding) with lidocaine 1% (10 cc / site).
 7. Cutaneous suture by intradermal points with resorbable thread.

Exit criteria from the hospital

Operating conditions

- Well-dissected Callot triangle.
- Artery and cystic canal identified and separately severed.
- Dry gallbladder bed.
- No biliary flow.
- No major incident.

After checking the patient in his room (by the surgeon and / or the anesthesiologist) if

- Tolerance of the liquid diet without vomiting.
- Stability of vital parameters.
- Exclusive effective oral analgesia.
- Walkable without vertigo.
- Urination was not a necessary condition for general anesthesia.
- The patient feels ready to go home.

Prescription

1. Analgesic alone: stage 1 or 2 of WHO.
2. Antibiotherapy was not systematic.

Surveillance after return home

- Phone call in the evening.
- Programmed control on the tenth day.

RESULTS

During the studied period, 122 laparoscopic cholecystectomies were performed in our department of which 55 respondents to the inclusion criteria were scheduled outpatients, a rate of 45%, and 67 (55%) were initially planned with a conventional hospitalization for the following reasons: logistic constraint with domicile located more than 100 kms from the hospital (54 patients), cholecystitis (8 patients), medical contraindication (3 patients) and finally refusal for 2 patients. The figure 1 below summarizes the sampling of our study:

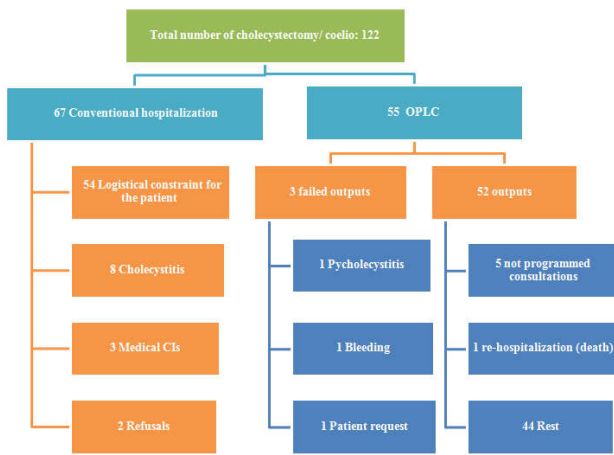


Figure 1 Sampling of the study.

General and epidemiological data

In this study, we analyzed the results of the patients planned for outpatient surgery, among these 55 patients, there were 45 women (82%) and 10 men (18%). The average age was 48.56 years with extremes ranging from 20 to 85 years. The modal age range was [50-60]. 49 patients (89%) lived in Marrakech, 11 of whom stayed with their families during the operation, while 6 patients (11%) lived in cities less than 100 kms from the hospital. In terms of educational level: 17 patients (30.9%) were illiterate and 12 patients (21.8%) had a primary level. The average weight was 73.81 kgs with extremes ranging from 50 to 101, the average height is 1.66 m with extremes ranging from 1.52 to 1.84 and the average BMI was 27.04 Kgs/m² with extremes ranging from 16.9 to 39.

Clinical data

The average delay before consultation was 10.7 months with extremes ranging from 0 month (incidental discovery) to 48 months, in 2 patients, vesicular lithiasis was incidentally discovered, 31 patients (56.36%) had at least one risk factor for nausea or vomiting: gastroesophageal reflux disease (n=19), anxiety (n=17), chronic smoking (n=5), peptic ulcer disease (n=3) and depression (n = 1). (Figure 2)

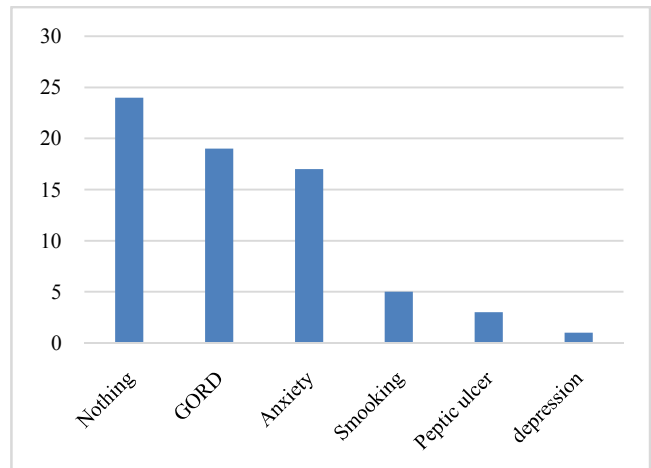


Figure 2 Risk factors for nausea or vomiting.

Biliary colic (n = 47) and nausea-vomiting (n = 27) were the predominant functional signs. For the physical examination data, they are summarized in figure 3.

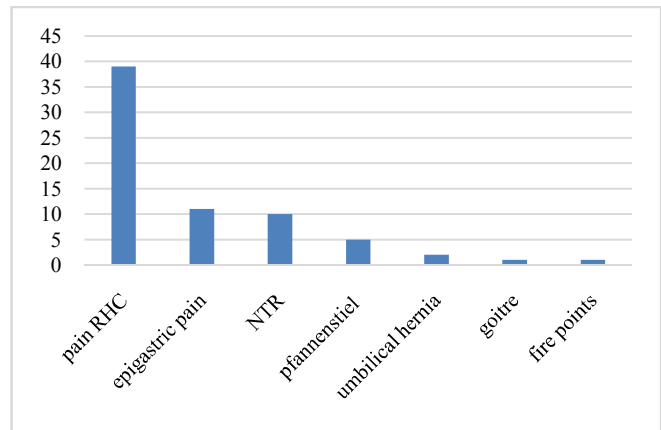


Figure 3 physical examination data.

Paraclinical data

No biological examination was performed in 31 patients (56.3%), 16 patients (29%) required biological explorations during the preanesthesia consultation; the remaining 8 patients had external biological check-up prescriptions (before the surgical consultation).

Hepatobiliary ultrasound was the only systematic examination performed in all patients (N=55), the results of this examination are shown in the figure below. (Figure 4).

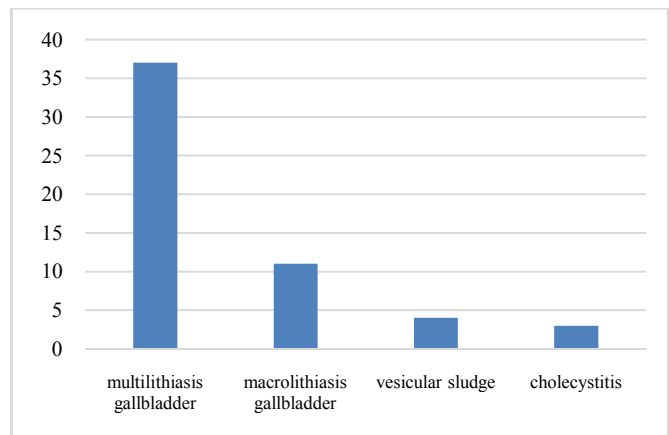


Figure 4 Ultrasound description of the gallbladder.

Anesthetic data

The average anesthetic consultation delay was 13.2 days, the surgical indications are shown in figure 5. 35 patients (63.6%) were ASA 1, 16 patients (29.1%) were ASA 2 and 4 patients (7.3%) were ASA 3. The different modes of anesthesia used are shown in figure 6.

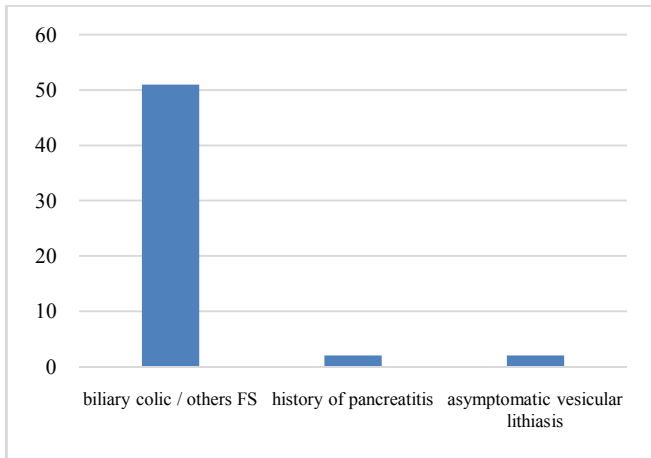


Figure 5 Operative Indications

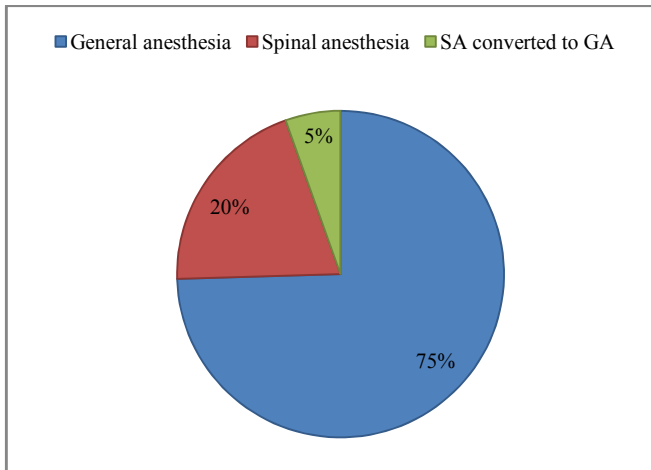


Figure 6 Anesthesia mode.

Operating data

The average operating time was 41.49 min with extremes ranging from 24 to 85 min. The average volume of CO2 consumed was 15.12 l (extremes from 6.5 to 34), we used 3 trocars in 54 patients and 4 trocars in 1 patient. Intraoperative exploration data are summarized in figure 7.

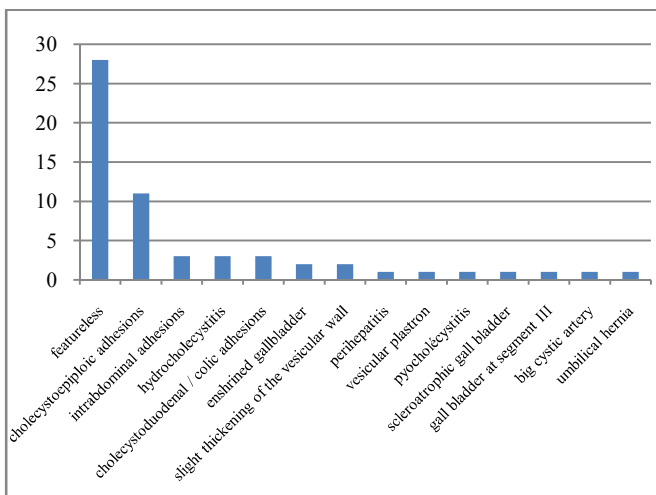


Figure 7 Surgical exploration data.

We were confronted with 11 intraoperative incidents (9 surgical and 2 anesthetic) as summarized in the table below (table I).

Table I Intraoperative incidents.

Incident	Number
perforation of the gallbladder *	4
controlled cystic artery bleeding	1
vesicular bed bleeding	1
gallbladder bleeding	1
lesion of the great omentum	1
partial decapsulation of the liver	1
intense scapulargia (during a SA)	1
bradycardia (during a SA)	1
Total	11

* : including 2 by the gripper.

In 8 cases (14.54%) we used irrigation and suction of the surgical site; in 2 cases (Pyocholecystitis and bleeding of the vesicular bed) we considered it necessary to put a drain and therefore the cancellation of the discharge of these 2 patients.

Surveillance data in the hospital room

The postoperative assessment of pain was performed using the simple numerical scale and had objectified that almost the majority of patients complained of mild to moderate pain (figure 8).

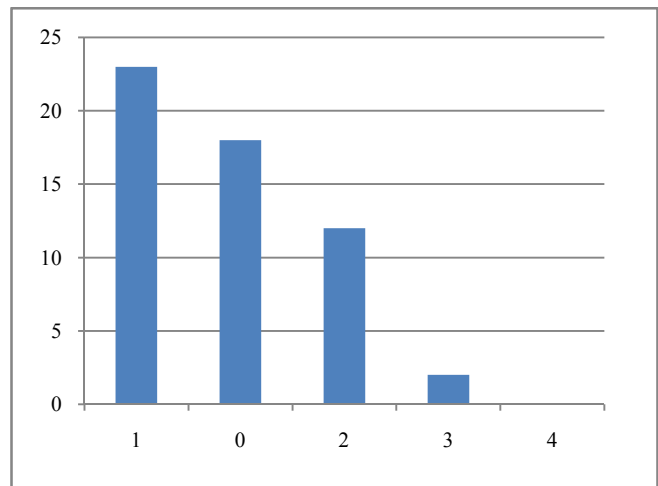


Figure 8 Postoperative pain assessment.

8 patients (14.54%) felt nausea and 9 others (16.36%) vomited once, 11 patients (20%) resumed intestinal transit during the afternoon (these are patients operated on under high spinal anesthesia), urination was not for us a formal discharge criterion, indeed only 28 patients urinated before their discharge. We recommended taking a herbal tea 2 hours after the end of the procedure for all our patients. The evaluation of postoperative vital signs was without particularity for all patients.

3 patients (5.45%) were kept in hospital, in two cases it was an intraoperative decision (one case of pyocholecystitis and one case of vesicular bleeding) while a third patient was hospitalized at the request of her family without obvious medical cause. The discharge prescription included an analgesic (paracetamol 1g times 3/day more or less associated with a non-steroidal anti-inflammatory drug (profenid 100 mg times 2/day), antibiotic therapy was not systematic and was reserved for special cases (vesicular perforation, diabetic terrain.)

Data after return home

On the evening of the operation we called any outgoing patient (n=52) to assess his condition and watch for any alert symptoms.

Only one patient (1.9%) was re-hospitalized at D2 for postoperative peritonitis and was resumed the same day, intraoperative exploration showed advanced peritonitis with release of the cystic duct clip, the patient died at D7 in resuscitation department for refractory septic shock. We noted 5 cases of unscheduled consultations (9.6%) for various reasons (Table II) and 3 cases of scheduled consultations in cardiology (2 for adjustment of anticoagulant treatment and 1 for treatment of an unknown hypertension).

Table II Unscheduled consultations.

Reason	Date	Number	treatment
abdominal bloating	D 20	1	symptomatic treatment
faecal impaction	D 5	1	enema evacuator
right scapulargia	D 2	1	addition of NSAIDs
vomiting	D 3	1	symptomatic treatment
skin allergy (povidone iodine)	D 7	1	symptomatic treatment

A scheduled check was performed on day 10 for all outgoing patients (n = 52), all patients (n = 51) expressed their satisfaction with this outpatient procedure (Table III).

Table III Satisfaction index (from 0: not satisfied to 10: very satisfied).

SI (scale from 0 to 10)	Number
10	41
9	8
8	2

Anatomopathological examination of the operative specimen was in favor of chronic lithiasis cholecystitis without signs of malignancy for all patients.

DISCUSSION

Study context

If now, laparoscopic cholecystectomy is the treatment of reference for symptomatic vesicular lithiasis, its realization in the context of an outpatient surgery continues to be debated, the opinions are divided, we believe that the cholecystectomy would be eligible for outpatients given the short duration of the procedure and the rarity of major postoperative complications requiring surgical revision estimated at 0.1-0.6% for biliary wounds and less than 0.05% for arterial bleeding [9; 10], in addition to that, these events are often detected preoperatively or during the first 6 hours postoperatively, while other complications such as fever or jaundice occur a few days later [9, 10].

In addition to the technicality of the surgical procedure, other logistical parameters could influence the feasibility of ambulatory laparoscopic cholecystectomy, especially in our Moroccan context (and that of emerging countries), we can mention the road infrastructure facilitating access to the hospital, coverage of the telephone network, availability of private cars. Another parameter that must be taken into consideration, is socio-cultural; we could imagine that patients prefer to stay more at the hospital and to receive

visits from their families, to our surprise, in reality, no patient expressed this wish and the acceptance to be operated on outpatient was estimated at 98.36% .

Selection of patients

The Spanish comparative study of Perez identified 3 inclusion criteria: 1) criteria related to the pathology: the absence of hospitalization for acute pancreatitis or acute cholecystitis during the last 3 months, the absence of lithiasis of the main bile duct and the absence of disturbance of liver tests. 2) General criteria: the absence of supra-mesocolic major surgery, not taking drugs or anti-aggregates platelets. 3) Social criteria: distance from the hospital and family support [11].

Exclusion criteria that often appear in the literature are: ASA 3, 4 and 5, very obese patients, over 70 years old, antecedent of abdominal surgery, suspicion of acute pancreatitis, acute cholecystitis, or lithiasis of the main bile duct [12].

In our study, we were inspired by these criteria with some differences; in fact there was no restriction on age or obesity, the exclusion of cases of acute cholecystitis or pancreatitis was based only on clinical signs and abdominal ultrasound data (only systematic investigation), we did not require biological tests (infectious or hepatic) for our patients (the cases requested were done externally before the consultation of surgery), the patients with ASA 3 were included in agreement with the anesthesiologist, as well as those undergoing anticoagulant therapy (we believe that the management of these patients could be done perfectly in an out-of-hospital setting, subject to a planned consultation on D2 for therapeutic adjustment), as in the literature (except an Italian study of 2012). [13]) an antecedent of supra-mesocolic surgery was for us a formal exclusion criterion. Otherwise we included without any problem the patients having a sub-mesocolic surgery (in particular 5 cases of caesarean section). (Including 5 cases of caesarean section).

Organization of the outpatient surgery unit:

To ensure optimum patient care, a separate and independent outpatient surgery unit with premises, staff and administrative procedures independent of conventional hospitalization units must be available at the hospital. As we do not yet have of such an infrastructure in our establishment, we used so-called conventional hospital structures (with common staff, operating rooms and recovery rooms). Most authors recommend starting the first outpatient cholecystectomy early in the morning with 11 am as the start time of the last intervention, this precaution would avoid the missed outings at most [14], we respected this protocol for the majority of patients , in all cases, the patient was kept under surveillance for at least 6 hours, and the exits were made at the latest around 8 pm.

Course of the intervention

The usual mode of anesthesia was general anesthesia for most patients, an intervention under high spinal anesthesia was left to the free choice of the anesthesiologist and the surgeon and had interested 11 patients, in 2 cases we were forced to convert to general anesthesia following a discomfort of the patient, if not it was an experience very well received by the 9 other patients and not inconvenient for the surgeon, we have no clear difference in the postoperative data between the 2 groups (GA and high spinal anesthesia),

so, we could say that laparoscopic cholecystectomy is feasible under spinal anesthesia, that it would significantly reduce the cost of the operative procedure (decreased operating room occupancy time and lower consumables cost), and of course could be better suited for outpatient surgery.

The pain of laparoscopic cholecystectomy is multifactorial, resulting mainly from incision site pain, peritoneal distension secondary to residual volume of Pneumoperitoneum, local vesicular dissection pain, and chemical peritonitis due to possible peritoneal extravasation of the bile [15]. On this physiopathological basis, we set up a multimodal intraoperative analgesia based on: the instillation of the diaphragmatic cupolas and the gallbladder bed (if not bleeding) with the xylocaine, the infiltration of the incision sites with marcaine and the intraoperative administration of paracetamol, NSAIDs and morphine. This protocol will strengthen postoperative analgesia.

For the safety of the patient and to avoid the lengthening of the operating time, which is considered as a risk factor of missed exits for certain authors [16], we have chosen according to the literature [12, 13] that the interventions are effected by a senior surgeon, or under his supervision, especially since we are still at the beginning of the experiment.

Regarding the number of trocars, contrary to the literature that recommends 4 trocars, the standard for us was 3 trocars, which is a habit of our service: the addition of the 4th trocar is not systematic and is left to the choice of the surgeon according to the operating conditions. In the absence of objective study on this subject, we do not think that the number of trocars (3 or 4) would be so important in the patient's postoperative satisfaction (esthetic satisfaction), but a trocar of less would in principle minimize postoperative pain [13]. In any case, it is obvious that the number of trocars must be a secondary concern for the surgeon; the essential is the safety of the operative act.

The insufflation pressure was 14 mm Hg with a flow rate of 2 l / min for patients operated under general anesthesia, for those operated under spinal anesthesia, the pressure was lower (10 mm Hg), and reached by steps thus minimizing patient discomfort .

No intraoperative cholangiography was performed in our study; it is a systematic practice in the Johannsen series [12]. We recall that patients suspected of having a lithiasis of the main bile duct (jaundice, or dilatation of the bile ducts) were excluded from the outset.

The operative exploration was without particularities in 28 cases and more or less binding for the others, the intraoperative discovery of peri-vesicular adhesions, signs of cholecystitis, or other abnormalities was not a formal contraindication to continuation of the outpatient procedure; the choice was left open to the surgeon and the anesthetist depending on the course of the procedure. Out of the 3 missed exits, two were for an intraoperative reason (pycholecyst and bleeding), besides, they were the only two patients in whom we felt the need for drainage.

In postoperative

At the end of the procedure and after awakening of the cases operated under general anesthesia, the patients are taken to

the surveillance room, then, after validation of the criteria, in their room at the service, where a first lift and a taking of herbal tea or water was allowed as soon as possible according to the literature [12], patients were able to go out after being examined by a surgeon and / or anesthetist.

The missed exits and their predictive factors

We kept in hospital 3 patients which defined a missed exit rate of 5.45%, two of them by decision of the surgeon for operating conditions (pycholecystitis and bleeding of the gallbladder bed), these 2 cases did not require conversion to laparotomy but it was safer to keep them in hospital, the third patient was kept at the request of his family. Table IV summarizes the rate of missed exits in the various series of the literature; although unlike other studies we included patients with ASA score 3, we had the lowest exit failure rate:

Table IV Missed exits

authors	year	Type of study	N OPLC/CH*	Missed exits
Johansson.M [12]	2005	Randomized clinical trial	48/52	8%
Vandenbroucke [17]	2003	retrospective	122 /151	19%
Vaughan.J [18]	2013	Cochrane Data base syst rev	205/214	19.3%
Zaafouri [19]	2009	prospective	39 /67	41 %
Johanet [7]	1998-2001	prospective	82/100	18
Our study	2018	prospective	52/55	5,45%

* N OPLC/ CH: number of ambulatory laparoscopic cholecystectomy / and with conventional hospitalization.

The main predictors of missed exits found in the literature are advanced age [14; 17; 19; 20], the lengthening of the operating time [17,19, 21] and the late start of the procedure after 11h [14; 17]. Optimal patient selection would further minimize the rate of missed exits.

Unscheduled consultations

The five patients who had minor postoperative complications were managed during an unscheduled consultation with good progression under symptomatic treatment, our unscheduled consultation rate (5/52 = 9.6%) joined that of the Vandenbroucke series [17]: 13/122 = 10.65%.

It is obvious that the possibility for the patient to contact the care team at any time and to come to the hospital in case of need is an effective means of monitoring and postoperative support for the patient. In our study we included two patients under anticoagulant treatment, the management of this treatment went very well outpatient with one or two postoperative cardiological consultations, we affirm that the existence of any co-morbidity requiring special precautions postoperatively should not formally constitute an absolute contraindication to outpatient management, and that this must be discussed on a case-by-case basis.

Readmissions –Reoperations

The readmission rate observed in the literature is less than 10% while that of reoperation is lower at around 1% (see Table V).

Table V readmission / reoperation rate in the literature.

Series	% success of OPLC	% of readmission	% of reopéración
Johanet [7]	82	5	1
Mjaland [8]	94	8	0,5
Robinson [20]	70	2	0,2
Vandenbroucke [17]	81	2,5	0
Zaafouri [19]	59	0	0
Johansson.M [12]	92	0	0
Vaughan.J [18]	80,7	3,5	0
Our study	94,5	1,9	1,9

In our study we rehospitalized a patient on the 2nd day after the operation, for postoperative biliary peritonitis (by loosening the cystic duct clip), requiring urgent surgical revision and who unfortunately died seven days later in intensive care after a refractory septic shock. The majority of the series do not report any deaths following an OPLC; a single death was reported by Roig, due to a Richter hernia through the umbilical opening [14].

Despite the presence of morbidity after OPLC, the literature data show that this approach (outpatient) does not increase the risk of complications of cholecystectomies - most of which are diagnosed during surgery or after 48H - and especially does not create a specific risk [9; 10; 22-25].

Patient's satisfaction

The evaluation of patient satisfaction is a paramount criterion in outpatient surgery. the satisfaction rate in the literature varies from 60 to 95% [3; 8; 19; 25], such a difference can be explained by the measuring instruments of this parameter, in fact, these must be sensitive, reproducible, applicable and validated that can estimate the patient's satisfaction on objective criteria and not on a general impression. In our series, the satisfaction index (on a scale of 0 to 10) was greater than 8 for all patients.

Interests of the OPLC

The results of OPLC and laparoscopic cholecystectomy with conventional hospitalization are similar in terms of morbidity and mortality, but the cost of the first procedure would be significantly lower (notably by the decrease in postoperative expenditure), Johanssen [12] demonstrated that the average cost of OPLC was lower than that of laparoscopic cholecystectomy with conventional hospitalization of nearly 11%.

We think that the cost of OPLC would be even more reduced if we operate our patients under spinal anesthesia, the cost of which is much lower than that of general anesthesia; we recall that this mode of anesthesia was successfully performed in our study in 9 out of 11 patients. In 2009 in Spain, 31131 cholecystectomies were performed with a hospital stay of 2.1 to 3.5 days. The use of OPLC would have saved 18 million Euros [26]. We imagine how much we can save if we also integrate other surgical procedures (visceral or other surgical disciplines). This rationalization of spending is very beneficial in a developing country like our (For comparison, 18 million Euros is about 10% of the cost of building a 500-bed university hospital!).

Beside the economic interest, there is also a health interest, in fact cholecystectomy alone accounts for nearly 20% of

operating procedures in our department, if we add parietal and proctologic surgery operations (perfectly eligible for outpatient surgery). the ratio would reach 45%, it is clear that an outpatient management of these acts would have a very positive impact on the activity of the department which would be even more profitable (increase of turnover, optimization of resources, shorter appointment times, channeling efforts rather for patients with heavier pathologies ...).

CONCLUSION

The results of our study and those of the literature demonstrate that OPLC is perfectly feasible with acceptable failure rates, low secondary complication rates and high satisfaction rates, the exclusion criteria for this approach in particular an age more than 70 years and an ASA 4 or 5, do not really limit the scope of this protocol and therefore do not affect its profitability.

While outpatient surgery around the world is booming, it is still in its infancy in our country, we believe that our study has demonstrated the feasibility of OPLC in our context and may be, together with other studies, an accelerator for the development of outpatient surgery in our country with the establishment of a legislative framework and adequate infrastructure for this procedure, this will surely contribute to the optimization of our health system

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