



## **Ambulatory surgery: A new clinical path**

**R.GRAICHI**

Department of General Surgery and Oncology - Oran  
University Hospital of Oran - Faculty of Medicine Oran  
E-Mail: [graichi.ramzi@univ-oran1.dz](mailto:graichi.ramzi@univ-oran1.dz)

### **SUMMARY :**

Outpatient surgery has become increasingly popular in recent years as an alternative to inpatient surgery. Our work aims to study and evaluate the feasibility of laparoscopic cholecystectomy on an outpatient basis.

65 laparoscopic cholecystectomies were performed over a period of one year, out of a total of 645 hospitalized cholecystectomies. 10.7% had to be hospitalised for the night and 4.6% were readmitted the next day, and no patients were re-operated.

In conclusion, our results confirm the feasibility of this clinical pathway in in a each university department of surgery.

### **RESUME :**

La chirurgie ambulatoire s'impose de plus en plus depuis quelques années comme une alternative à la chirurgie avec hospitalisation, notre travail se propose d'étudier et d'évaluer la faisabilité de la cholécystectomie laparoscopique en ambulatoire.

65 cholécystectomies laparoscopiques ont été réalisées sur une période d'une année, sur un total de 645 cholécystectomies avec hospitalisation. 10,7% ont dû être hospitalisés pour la nuit et 4,6% ont été réadmis le lendemain, et aucun patient n'a été réopéré.

En conclusion, nos résultats confirment la faisabilité de ce chemin clinique dans un centre universitaire

## INTRODUCTION

Outpatient surgery is defined as qualified surgery requiring the use of an operating theatre and for which the patient's stay is less than or equal to 12 hours.

The first cases of outpatient laparoscopic cholecystectomies date back to 1990, marginalized for a long time (1%), this practice has tended to develop in recent years.

This type of care envisages the patient being discharged in the hours following the operation. It is an alternative to the conventional surgery where the hospitalization is complete

The downside remains the peritoneal approach, with its postoperative pain, nausea and vomiting.

The choice of this clinical path can only be made by studying the patient's profile in relation to the operative act.

## MATERIAL AND METHOD

Over a period of one year, 65 patients, all the patients are female, were included in the ambulatory laparoscopic cholecystectomy protocol. Over the same period, we had to perform 345 standard cholecystectomies (laparoscopic and conventional). Patients were scored according to the classification of the American society of anesthesiology.

(ASA): 63 were ASA 2 ASA II, the indications and I were uncomplicated gallbladder lithiasis (undilated common bile duct and normal hepatic biological assessment) (61 cases) and vesicular polyp (4 cases).

The cholecystectomy was carried out by laparoscopy; the average time of the operation was 40 minutes with operating times ranging from 20 to 130 minutes.

The intervention was scheduled at the beginning of the operative program (8.30 am) and the exit at 6 pm with a check-up the next day.

### ***The surgical protocol:***

An open-laparoscopy, the technic being standart (cholecystectomy with 3 or 4 trocars) a pneumoperitoneum at 12 mm of Hg.

A classic anterograde cholecystectomy and a maximum of exsufflation of the pneumoperitoneum at the end of the operation.

***The anesthesia protocol :*** Valium/midazolam 0.12 mg/kg Fentanyl 5µg/kg then 1µg/kg in maintenance Pancuronium 0.10 mg/kg then 0.01mg/kg in maintenance

Isoflurane 2% then 1% with oxygen and nitrous oxide

This is to control nausea and vomiting.

The criteria for selecting patients were mainly based on psycho-social and medical criteria (Table I).

*Table I: Eligibility Criteria*

Psycho-social criteria	Medical criteria
Home < 1h	Score ASA I - II
Phone	Age < 70 years
Never alone (companion available)	Pre-anaesthesia consultation (1 week)
Private vehicle	Abdominal ultrasound (1 month)
Good understanding	
Favourable disposition	

coming out is decided after consultation with the surgeon/anaesthetist couple according to the modified Aldrete wake-up score (Table II), a score above 9 allowing the patient to return home [1].

## RESULTS

Of the 65 patients, 7 were retained for surveillance, 3 patients for an operation lasting more than 90 minutes, 2 for intraoperative cholecystitis and 2 patients for pain rebelling to the usual analgesics, following viscerolysis for adhesions.

Exit was deferred from 1 to 3 days depending on the situation (Table III).

**Table III: Causes of failure**

Causes	number	delayed output
Operating time > 90 min	3	D1
Cholecystitis	2	D3
Pain	2	D3

**Morbidity, Mortality:**

3 patients were readmitted the next day for residual pain (2 cases) and for the discovery of a sub hepatic collection (the ultrasound had shown a collection of 2 Cm of diameter).

No patients had a second surgery and no mortality .

*Table II: Modified Aldrete Wake-up Score*

Criteria	Score	Clinical signs
Motor Activity	2	Mobilizes its 4 members
	1	
	0	Mobilizes 2 members
		No movement
Breathing	2	Large breathing movements
	1	
	0	Limited breathing effort or dyspnea
		No spontaneous respiratory activity
Circulatory Activity	2	PA Systolic +/- 20% value in pre anaesthesia
	1	
	0	PA Systolic +/- 20-50% value in pre-anaesthesia
		PA Systolic +/-50% value in pre-anaesthesia
Awareness	2	Fully awake
	1	
	0	Wake up to the call of his name
		No alarm clock on call
SpO2 Pulse Oxygen Saturation	2	> 92% in the air
	1	
	0	Additional O2 required for an SpO2 > 92%.
		< 92% with additional O2

**DISCUSSION**

Started in the 1990s by LEDET [2], ambulatory laparoscopic surgery progressed timidly in the first years [2, 19, 27], surgery with 24-hour hospitalization began in our department in 2005, initially involving cholecystectomy for uncomplicated gallbladder lithiasis and then generalized to parietal surgery and then thyroid surgery.

This prompted us to introduce the concept of outpatient surgery and propose it for laparoscopic

cholecystectomy for a non-complicated gallbladder lithiasis.

While the recruitment rate for this clinical pathway is steadily increasing [3], our recruitment remains modest but stable, as is the case for SPAW et al. This rate has risen from 23% to 37% and that of VOITK [4] from 75% to 95%, due to improvements in technical and organizational aspects.

Morbidity varies between 2% and 4% depending on the series, but the incidence of major complications remains low [5.6.25]. 7 patients in our series had to stay longer than 12 hours, delayed awakening, postoperative pain rebelling against conventional analgesics were the most common symptoms.

Our failure rate (17.7%) is identical to the different published series [7.8.9.21.22]. For FIORILLO and All [10], the reasons were mainly pain (39 cases), nausea (15 cases) and 4 patients preferred to stay in hospital in the evening. The readmission rate varies according to the authors between 0% and 8% [9.11], in our series it is 4.6%, this low rate shows that the selection criteria are appropriate, and stricter they are, lower the risk of readmission is [12.22].

The complications are rare, only 1.1% to 4.5% [13].

The most frequent complication is the biliary collection (32%), a complication that is also found in our series (1 case) but which did not require a surgical revision and mortality was zero.

***Outpatient or inpatient cholecystectomy?***

Several studies have shown that it is feasible without risk to the patient [14.15.16.17], but only two prospective controlled studies comparing the two clinical approaches have concluded that there is no benefit in keeping patients under 70 years of age, ASA I or ASA II, without risk factors for inpatient conversion [18.19.24].

***So why such a delay?***

This is due to medical reluctance, namely the fear of postoperative complications such as bleeding or biliary wounds, but also the fear of the patient who does not conceive of such a clinical path. Although studies show no difference between outpatient and inpatient laparoscopic cholecystectomy in terms of postoperative comfort and quality of life

## **CONCLUSION**

Our study confirms that the ambulatory laparoscopic cholecystectomy (ALC), already adopted by some university centers, can be safely practiced routinely in specialized units with well-trained staff, with well-established medical and psychosocial selection criteria.

This outpatient treatment reduces the waiting time for this type of pathology while ensuring the comfort and safety of these patients since the failure rate is acceptable and the complication rate remains low.

This clinical pathway must be offered to patients whenever the selection criteria guaranteeing patient safety are met.

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