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ORIGINAL ARTICLE

# A critical analysis of factors leading to next-day discharge in ambulatory surgery patients

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**KEYWORDS**
Exclusion criteria;
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**Summary**
*Introduction:* Ambulatory surgery (AS) is becoming the rule. However, some patients do not have AS despite correct indications. The purpose of this retrospective study of prospectively collected data was to analyze why these patients do not have AS and evaluate their immediate post-operative course, in order to broaden the indications for AS.
*Material and methods:* Between January and December 2013, the reasons why patients who had appropriate indications for ambulatory cholecystectomy or hernia repair but later had conventional hospital management were recorded. The primary endpoint was early post-operative morbidity. Secondary endpoints were demographic, surgical, anesthetic, post-operative data as well as analysis of criteria leading to conventional hospital stay.
*Results:* Among 410 patients undergoing surgery for accepted AS indications, 158 (39%) did not have AS; 113 out of these patients (72%) were discharged the day following surgery. Of the 69 patients (43.6%) who did not have AS for medical reasons (50 by the surgeon's decision alone), 60 patients could have undergone AS since their outcome was uneventful in 96% of cases; only three patients (2.5%) had post-operative complications.
*Conclusion:* The AS rate could have been increased by 15% through better surgical and anesthetic collaboration.


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## Introduction

Ambulatory surgery (AS) is defined in France as hospital stay of less than 12 hours, without overnight hospitalization. This must be distinguished from Anglo-Saxon countries where AS consists of hospital stay of less than 24 hours but includes hospital discharge the day after operation [1].

Ambulatory management was fixed as a national priority in 2010 by the High Health Authority of France (*Haute Autorité de santé* or HAS) and by the French Association of Ambulatory Surgery (*Association française de chirurgie ambulatoire*). Recently, the French Society of Digestive Surgery (*Société française de chirurgie digestive* [SFCD]) and the Association for Hepatobiliary and Transplantation (*Association de chirurgie hépatobiliaire et de transplantation* [ACHBT]) also issued recommendations concerning digestive and endocrine surgical procedures that could fall into this category. Digestive surgery procedures that have been validated include cholecystectomy for biliary colic (Grade A recommendation), hernia repair (Grade B recommendation), gastro-esophageal reflux repair (Grade C recommendation) and proctologic surgery (Grade C recommendation) [1].

The rationale for AS is based on several arguments: hospital costs are lessened, patient satisfaction is improved, without a decrease in quality of care or increased risks, as long as strict selection criteria are respected [1]. Nonetheless, certain patients who could benefit from surgery that technically could be performed in an ambulatory setting are nevertheless managed with conventional hospitalization, either for medical, organizational or social reasons (history, home remote from hospital, no accompanying person...).

The goal of this retrospective study was to analyze the outcome and immediate post-operative morbidity of patients who underwent operative procedures that should have been eligible for AS management, but for whom this management modality was finally contra-indicated, requiring hospitalization and next-day discharge.

## Patients and methods

### Population

For the 2013 calendar year, the records of all patients with indications amenable to AS (cholecystectomy, inguinal or umbilical hernia repair) but who remained in hospital overnight were included in this study. This was a retrospective transversal study of prospectively collected data.

### General selection criteria for AS

The general criteria for AS have been precisely defined by the SFCD and French Society for Anesthesia and Intensive care (*Société française d'anesthésie et de réanimation* [SFAR]) [1,2]:

- elective, short duration (usually < 1 h 30), low risk (in particular respiratory and hemorrhagic) surgical procedures that typically have simple post-operative courses (vomiting and pain issues easily overcome);
- anesthesiologist involvement starting from pre-anesthesia consultation to discharge preparation;
- procedure performed within a health care structure with adequate organization for both surgery and anesthesia.

Patients who can benefit from AS are those responding to several social and medical criteria including [1,2]:

- social: satisfactory understanding, good compliance with medical orders, good hygiene, housing accommodations at least as good as the care facility, availability of an accompanying person who can remain with the patient over the first night, accommodations less than one hour from an appropriate health care facility, rapid access to a telephone;
- medical criteria: patient with ASA I, II, or stabilized III co-morbidity.

### General criteria for non-inclusion in AS programs

These are also defined by the SFCD [1] and the SFAR [2].

### Specific non-inclusion criteria for ambulatory cholecystectomy

The specific criteria for exclusion of patients from AS cholecystectomy include:

- any complication of cholelithiasis that could be a relative or absolute contra-indication as defined by the surgeon: sonographic signs of chronic cholecystitis [3], pre-operative findings suggesting that surgery is likely to last longer than 90 minutes [4];
- history of previous abdominal surgery via laparotomy excepting appendicular surgery;
- surgery planned via laparotomy (subcostal or midline incision);
- pre-operative diagnosis of common bile duct stones [5];
- anticoagulation treatment with increased risk of bleeding [6].

### Specific criteria for non-inclusion of patients undergoing inguinal or umbilical hernia repair

The criteria are as follows:

- emergency surgery setting: incarceration and/or strangulation;
- for extra-peritoneal laparoscopic repair: antecedent history of infra-umbilical laparotomy [7];
- presence of cirrhosis, recognized pre-operatively;
- voluminous and/or irreducible inguinoscrotal hernia, as well as large defect umbilical hernias.

### Pre-operative management

Patients are first seen in consultation to validate their surgical indication. AS can be proposed based on operative indications and patient history and the patient is then referred for anesthesiology consultation (preferably on a different day). Secondarily, the anesthesiologist could decide to refuse the patient for ambulatory and opt for a conventional hospitalization.

### Classification of surgical complications

Post-operative complications were tabulated during the first 30 post-operative days. Complications were considered ''early'' when occurring within the first seven post-operative days. Late complications were those occurring between the eighth and post-operative days. The Dindo-Clavien classification was used to evaluate post-operative