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REVIEW

Ambulatory management of gastrointestinal emergencies: What are the current literature data?

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Summary
Introduction: Ambulatory management is a modality of care defined in France by a hospitalization of less than 12 h without an overnight stay. Currently, few data are available on its role in the management of gastrointestinal emergencies, such as appendectomy for acute appendicitis, cholecystectomy for acute cholecystitis or emergency proctologic surgery. The aim of this systematic review was to study the published data regarding the feasibility of ambulatory management of emergency visceral surgery and to enquire about the possibilities of further development of this form of management.
Materials and methods: A literature search was conducted from the PubMed® databank taking into account all published data up to July 2013.
Results: For acute appendicitis, the success rate of short-stay hospitalization was 72% with unplanned read-mission rates ranging from 0 to 53%, a rate of unscheduled consultations ranging from 0 to 11%, and unplanned inpatient hospitalization rates ranging from 0% to 5%. For acute cholecystitis and proctology, there are few published data.
Conclusion: Ambulatory management has been sparingly studied in the setting of gastrointestinal surgical emergencies. However, there is probably a place for development of this form of management.

Introduction

Ambulatory surgery care is defined in France by a hospitalization of less than 12 h without overnight stay. This definition underlies the regulation of outpatient surgery in the French health care system. In Anglophone countries, the definition is broader and includes hospitalization of less than 24 h. This variability in definition makes it difficult to compare data from the literature.

In France, ambulatory surgical activity is based on recommendations promulgated by three French learned societies (French Society of Digestive Surgery [SFCD]; French Association of Hepatobiliary Surgery and Liver Transplantation [ACHBT]; French Association of Ambulatory Surgery [AFCA]) [1]. National guidelines currently recommend ambulatory

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surgery for approved indications, such as elective cholecystectomy and inguinal hernia repair, and guidelines for other types of visceral surgery (gastroesophageal reflux surgery, bariatric sleeve gastrectomy) are being developed (GASTRAMBU trial) [2—4].

Currently, few data are available on the role of ambulatory management for gastrointestinal emergencies, such as appendectomy for acute appendicitis, cholecystectomy for acute cholecystitis (AC), and emergency proctologic surgery.

Yet, it is clear that some emergency interventions are short in duration and routine in performance, with a low complication rate and relatively little postoperative pain, nausea or vomiting; these, therefore, may represent a good indication of outpatient care. In other specialties, such as orthopedic surgery, ambulatory management of emergencies is more developed, leading some surgical services to develop ambulatory units for surgical emergencies [5].

The aim of this development was to study the published data regarding the feasibility of ambulatory care in emergency gastrointestinal surgery and to examine the possibilities for further development of this management modality.

Methodology of the literature search

A literature search was conducted based on the PubMed® database taking considering all published data available up to July 2013. We also searched the references that formed the basis for the recommendations by three French learned societies (SFCD, ACHBT, AFCA) [1]. We included all articles published in English or French dealing with adult patients.

We used keywords referring to outpatient surgery (day-case surgery, day-care surgery, ambulatory surgery, outpatient surgery) and terms associated with treated diseases (appendicitis, cholecystitis, proctologic surgery, anal abscess, hernia repair). We considered all articles dealing specifically with urgent surgery and series that included patients undergoing emergency surgery, or dealing with surgical hospitalizations of less than 12 h or less than 24 h.

The organization of ambulatory management of emergencies

The first obstacle to outpatient management of simple emergencies is organizational structure. In some situations, the organization can be relatively simple if the patient presents early and is operated immediately. But in most cases, ambulatory management is possible only when an intervention can be scheduled for the next day after the emergency department visit. Ambulatory management may therefore be limited to patients consulting during the week or on Sunday, allowing outpatient hospitalization on Monday. It seems more difficult to integrate patients who present urgently on Friday or Saturday into an outpatient program, due purely to organizational constraints. However, for some emergencies, such as AC, a delay of more than 24 h between consultation and surgery seems possible. The development of 24 hour-a-day ambulatory surgery units might allow more widespread development of ambulatory management of gastrointestinal emergencies.

The integration of emergency surgeries into an ambulatory care program must also take into account the very organization of the service. It therefore seems preferable to reserve beds for emergencies and even to maintain a dedicated operating room for emergencies. The cost, feasibility and appropriateness of such measures must be studied.

Some teams have already developed ambulatory units dedicated to emergency surgery. The team at the Pitié-Salpêtrière Hospital in Paris recently published a feasibility study of an emergency outpatient surgery unit, available on a 24 hour-a-day basis. This unit complies with the eligibility criteria for ambulatory surgery defined by the French system, but allows ambulatory surgery and hospitalization and discharge at any hour of the day. Most of the conditions treated (75%) involved procedures of visceral or general surgery (abscess drainage). Other conditions were orthopaedic emergencies (31%), maxillofacial surgery (3%), and urology (3%). In this study, the authors reported an 86% rate of discharge without re-admission. The causes of failure of outpatient management were mostly related to surgical procedures requiring inpatient postoperative monitoring (drains, aspiration devices, imaging) (38%), lack of family support for post-discharge care (28%), and persistent postoperative nausea and vomiting (14%) [5].

Different diseases

Acute appendicitis

Eleven articles in the literature deal with outpatient appendectomy. Among these publications, six are retrospective studies [6—11], five are prospective studies [12—15], and one is a case-control study [16]. There is no prospective randomized study or meta-analysis in the literature. Only three articles specifically studied a hospital stay of less than 12 h [10,16], while six addressed a short-stay hospitalization of less than 24 h [6—9,11,13] and two articles dealt with a hospital stay of less than 72 h [14,15]. Five of the ten (11?) studies included patients with complicated acute appendicitis. The unplanned inpatient admission rate was reported in eight of the eleven studies and ranged from 0% to 53%. It is notable that the highest rate of unplanned admissions (corresponding to the failure of outpatient care) was found in a study that dealt with < 12 h hospitalization (true outpatient surgery by the French definition) [10]. The causes of unplanned admissions were medical problems (pain, nausea, vomiting, food intolerance), social reasons (inadequate living conditions, patient refusal) or technical reasons (late-in-the-day surgery).

The rate of unscheduled consultation was reported in six studies and ranged from 0% to 11%. The causes of unscheduled consultations were pain, wound infection, deep abscess, nausea, vomiting and impaired general condition.

The unplanned hospitalization rate was reported in eight studies and ranged from 0% to 5%. Causes of hospitalization included surgical site infection, fever, and deep vein thrombophlebitis. The re-operation rate ranged from 0% to 2.5%. It should be noted that only one study reported re-operations for intra-abdominal abscess, but complicated forms of acute appendicitis were included in this study [9] (Table 1).

The mortality rate reported in these studies was zero and the morbidity rate ranged from 0% to 13%. The main causes of morbidity were abdominal wall infections, deep abscesses, and postoperative hematoma. A satisfaction survey was conducted in the four prospective studies. The satisfaction rate was between 83% and 100%. The interval to return to work was reported in three studies and ranged from 7 to 14 days.