

Quality assessment in ambulatory surgery in a community hospital

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Abstract

Clinical quality assessment is reviewed in 3231 patients operated on in the major ambulatory surgery (MAS) program of a 300-bed community hospital over 18 months. The substitution index was 29.96%. Unplanned admission rate was 2.9%, mainly related to anaesthetic complications. Post-operative morbidity occurred in 60 patients (1.9%); all but one being minor. Patient satisfaction was evaluated through a mail questionnaire. None of the respondents was dissatisfied with the process and 95% of them would choose MAS again. The MAS program provides safe and high quality surgical management and is widely accepted by patients. © 1998 Elsevier Science B.V. All rights reserved.

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1. Introduction

Main scientific and health care organizations promote quality assessment in major ambulatory surgery (MAS) facilities [1,2]. Quality assessment provides information to determine if the objectives are accomplished and to improve the results. A database including information related to structure, process and clinical outcome should be made to allow periodical analysis of data.

Cost-effectiveness in healthcare management policies has been the most important factor explaining MAS development and has contributed to increase the number of day surgery units (DSU). However, the main purpose of health professionals must be the preservation of excellence in clinical healthcare. In that sense, clinical outcome evaluation is essential in quality assessment. Several indicators have been described to assess clinical quality.

The aim of this paper is to evaluate the clinical quality of the activity of the DSU in a general community hospital.

2. Patients and methods

Our 300-bed general community hospital has had a DSU since June 1994. Data required for the study were prospectively collected for all patients operated on the DSU from June 1994 until June 1996. The substitution indices were calculated and expressed as the percentage of procedures performed in the DSU in relation to all or specific procedures carried out in the hospital. The clinical quality indicators systematically reviewed were:

Unplanned admissions: patients not suitable to be discharged from the DSU the day of surgery.

Readmission's after discharge: patients admitted to the hospital after being discharged from the DSU with a diagnosis or cause related to the MAS.

Need of medical care after MAS: number of patients who visited their family doctor or the emergency department because of problems related to the MAS.

Post-operative morbidity: short term postoperative morbidity was assessed by phone call at 24 h after surgery and by a mail questionnaire sent 2 weeks after the operation.

Patient satisfaction: patient satisfaction assessment was done by a prepaid mailed questionnaire 2 weeks after the operation. Patients were asked to express their satisfaction with the entire process (deficient,

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good, very good, excellent), their availability to be operated in the DSU again if needed and to report the degree of pain (no pain, minimum, moderate, severe) and the existence of post-operative complications.

The causes of cancellation, unplanned admissions (categorized in anesthetic, surgical, medical, administrative or social) and readmission's after discharge were analyzed. Moreover avoidability or unavoidable of them were also recorded.

3. Results

From June 1994 to December 1996, 3231 patients were operated on in the DSU. During the same period of time, 7553 major inpatient surgery procedures were performed. The overall substitution index for MAS was 29.96%. A progressive increment in the DSU activity was observed through the evaluated period: 21.7% in 1994, 26.7% in 1995 and 36.5% in 1996.

The characteristics of the patients and clinical status according the ASA criteria are shown in Table 1. Among the 970 patients aged more than 60, 127 were 80–90 years old and nine were older. The surgical specialities, the number of procedures performed and the specific substitution index for each procedure are displayed in Table 2. The overall cancellation rate was less than 1%.

During the study period mentioned above, 96 outpatients that underwent MAS were admitted the same day of surgery, resulting in an overall unplanned admission rate of 2.9%. Readmission after discharge occurred in six cases (0.3%). Unplanned admissions distributed by categories are shown in Table 3. The most frequent causes for unplanned admission were related to anaesthesia; 29 cases were considered avoidable and 21 potentially avoidable (mainly nausea and vomiting). All unplanned admissions in the surgical and medical categories were considered unavoidable, while administrative causes were all considered avoidable. Social unplanned admissions were avoidable in four cases

Table 1
Patient characteristics

Patient characteristics	n	%
Age (years)		
<20	550	17
20–60	1711	52.9
>60	974	30.1
ASA status		
I	2150	66.5
II	1008	31.2
III	69	2.13
IV	4	0.1

Table 2
Procedures performed in the DSU

Surgical speciality	Number of procedures	Substitution index*
General surgery	849	27.5
Orthopedics	888	32.7
Vascular surgery	235	31.5
Ophthalmology	485	38.9
Plastic surgery	147	74.6
Gynecology	130	10.5
Urology	247	30.5
Pediatric surgery	109	39.9
ENT	121	29.9
Anaesthesiology	8	0.2
Endoscopic surgery	12	0.3

* The substitution index is expressed in percentages.

(inadequate selection) and unavoidable in two (the patient refused discharge).

Post-operative morbidity occurred in 60 patients (1.9%) and the causes are shown in Table 4; All but one were minor complications. Only one case of non-stop bleeding needed re-operation, resulting in a major post-operative morbidity of 0.05%. Pain (49%) is the most important cause of post-operative morbidity after discharge (Table 5).

Table 3
Causes of unplanned admissions

Causes	n	%
Anaesthetic	50	1.5
Nausea and vomiting	23	23.9
Prolonged recovery from anesthesia	9	9.3
Hypotension	7	7.2
Urinary retention	6	6.2
Anaesthetic complications	2	2
Pain	2	2
Headache	1	1
Surgical	21	0.6
Bleeding	8	8.3
Surgical complications	5	5.2
Extensive surgery	5	5.2
Additional procedure	1	1
Reoperation	1	1
Urinary retention (urologic surgery, local anaesthesia)	1	1
Medical	11	0.3
Observation/treatment of a previous condition	8	8.3
Temperature	2	2
Miscellaneous	1	1
Administrative	8	0.2
Late start of operation	7	7.2
Miscellaneous	1	1
Social	6	0.2
Inadequate selection	4	4.1
Refusal to discharge	2	2

Table 4
Causes of post-operative morbidity

Post-operative morbidity	n	%
Anaesthetic	41	68.3
Nausea and vomiting	23	38.3
Hypotension	7	11.7
Urinary retention	6	10
Anaesthetic complications	2	3.3
Pain	2	3.3
Headache	1	1.7
Surgical	17	28.33
Bleeding	8	13.3
Surgical complications	5	8.3
Wound infection	1	1.7
Additional procedure	1	1.7
Reoperation	1	1.7
Urinary retention (urologic surgery, local anaesthesia)	1	1.7
Medical	2	3.3
Temperature	2	3.3

Only 16% of the patients sent back the mailed questionnaire. A total of 49% of them expressed an excellent satisfaction with the entire process; it was very good for 36% and only good for 15%, while no deficient judgement was registered. In 95% of cases the patients would choose to be operated by MAS again.

4. Discussion

Major ambulatory surgery has greatly increased in the USA in the last decades, where it accounts for nearly 60% of all surgery performed at the present time. The pace of development has been slower in Europe, but great variations between countries can be noted [4]. One of the most important factors explaining the development of MAS is the need for cost containment in health [5]. However, this cost containment must preserve the quality of medical care of the surgical patient. For that reason, several clinical quality indicators have been developed in order to ensure excellence in patient care. The establishment in each DSU of standards for each clinical quality indicator has been advised [6].

Table 5
Causes of post-operative morbidity after discharge

Post-operative morbidity after discharge	n	%
Pain	1583	49
Distress	905	28
Bleeding	485	15
Nausea	194	6
Wound infection	194	6

Despite the fact that almost one third of our patients were aged over 60, the overall post-operative morbidity was under 2% and less than 0.1% when considering only major morbidity. Good selection of patients (ASA I-II) as well as careful surgical and anaesthetic techniques may have been responsible for these results.

Our low rate of unplanned admissions is probably both related to an accurate selection of patients, based on very strict clinical and social criteria and careful administrative support. There is a wide variability in unplanned admissions in different series, ranging from 1.28% [7,8] to near 24% [9], but most of them are around 5–10% [10–13]. Furthermore, several series with lower rates usually include an important proportion of minor procedures such as oral surgery, breast biopsy or skin surgery. More studies in homogeneous populations (similar surgical procedure, age and clinical status) should be undertaken to allow comparisons in the quality provided by different DSUs.

All patients included in our study underwent major procedures. Our morbidity rates compare favorably with other series that include similar procedures from a similar setting: a hospital-integrated DSU. The reasons for unplanned admission were mainly anaesthetic and avoidable. We believe that a better but safe approach in the management of post-operative nausea and vomiting is needed [14]. Unfortunately, the organization of our DSU obliges patients not discharged by 5 p.m. to be admitted to the hospital. In fact, most of them would have been able to be discharged later in the evening, which could have avoided some hospital admissions. Our readmission rate after discharge is lower than that reported by others [9,12].

Patient satisfaction in our study should be analysed cautiously because of the poor rate of responses obtained by the mailed questionnaire. This may be a consequence of the assessment method. Indeed, a lower response rate when questionnaires are administered to all patients has been described [15]. The use of new assessment methods, such as phone calls [9,12] or sending new questionnaires to the non-responders [16], could obtain a higher response rate. Nevertheless, no complaint has been made against MAS or the DSU in our hospital.

The substitution index obtained by our DSU is reasonable for a young MAS program and similar to that described by others in our area [12]. The progressive increase over the observed period of the substitution index may be a consequence of the improved experience and confidence, based on the good clinical results and high patient satisfaction [3].

In conclusion, our MAS program has provided safe and high quality surgical treatment and is well accepted by patients. Specific interventions in the management of post-operative complications and a more accurate patient satisfaction assessment are needed in order to improve results in the future.

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