

A Retrospective Analysis of Reasons for Cancellation of Elective Surgery in a Teaching Hospital

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Abstract

Introduction: Unanticipated cancellation of scheduled elective operations decreases theatre efficiency and is inconvenient to the patients, their families and the medical teams. By knowing the reasons, appropriate steps can be implemented to reduce the rate of cancellations to a minimum.

Materials and Methods: This was a retrospective study. Scheduled elective general surgical procedures were reviewed from theatre records from June 2009 to May 2010. Operative cancellations were defined as those patients that were scheduled in the operative list, were shifted to the OR but did not have the planned surgery on the intended date.

Results: Out of 3618 scheduled surgeries, 246 (6.8%) were cancelled. The most common category for cancellations was surgeon related 106 (44.1%), followed by administrative 71 (29.5%), workup related 39 (16.2%), patient related 24 (10%). Case cancellations can be reduced by improving preoperative assessment, proper scheduling of cases and better interdepartmental coordination.

Conclusions: Appreciation of the reasons for cancellation on the day surgery can improve theatre utilization by permitting administrators and clinicians to anticipate those cases in which problems might arise so that essential attention can be paid to them.

Keywords: Cancellation, Surgery

INTRODUCTION

Unanticipated cancellation of scheduled elective operations decreases theatre efficiency, wastes theatre time and resources, adds to hospital expenses and is inconveniencing to the patients, their families and the medical teams.¹⁻³ It also causes patient dissatisfaction and decreased staff morale. Case cancellation results in wasted investigations and cross matching, leads to delay in patient care and can potentially affect the clinical outcome.⁴ The rate of surgical cancellation is one of the most important quality indicators of operation theatre facilities. The reasons for cancellations can be patient related, workup related, surgeon related or administrative. By knowing the reasons, appropriate steps can be implemented to reduce the rate of cancellations to a minimum.⁵

MATERIALS AND METHODS

This was a retrospective study done at Teerthanker Mahaveer Medical College and Research Centre, India.

Scheduled elective general surgical procedures were reviewed from theatre records from June 2009 to May 2010. Procedures that did not require an anaesthetist and those cancelled from the ward were excluded from the study. The patients were posted for surgery only after they had obtained preanaesthetic checkup (PAC) clearance. The operating schedule of the concerned units in the Department of General Surgery is prepared by the surgeons and sent to the OR by 15.00 Hours on each working day. Operative cancellations were defined as those patients that were scheduled in the operative list, were shifted to the OR but did not have the planned surgery on the intended date.

RESULTS

A total of 3618 surgeries were scheduled during the study period. Cancellations occurred in 246 (6.8%) cases. The reasons for cancellation were grouped into patient related, surgeon related, work-up related and administrative related (Table 1). Out of the 246 cancellations, no detailed

Table 1: Reasons for cancellations

Categories	Cancellation reasons	No.
Surgeon	Time constraints	74
	No senior surgeon available	14
	Surgical team involved in a different emergency	07
	Change in surgical plan	06
	Wrong diagnosis/decision	05
	Subtotal	106 (44.1%)
Administrative	Shortage of autoclaved surgical equipments/linen	20
	Lack of OT staff	09
	Blood not arranged by attendants	19
	Surgical equipment failure	07
	Acute disruption of water/electric supply	08
	Subtotal	71 (29.5%)
Work up	Acute change in medical status	24
	Abnormal laboratory tests	10
	Medical workup incomplete	05
	Subtotal	39 (16.2%)
Patient related	Patient refused consent	09
	Patient did not turn up	07
	Pre-operative instructions not followed	08
	Subtotal	24 (10%)

reason could be found in the medical records of 6 patients. The most common category for cancellations was surgeon related 106 (44.1%), followed by administrative 71 (29.5%), workup related 39 (16.2%), patient related 24 (10%). Overall, the most common reason for on the day cancellations in our study was the lack of availability of theatre time, (or time constraints) which in turn was because of overrun of previous surgery and intentional overbooking of the OR list.

DISCUSSION

The cost effective use of surgical facilities necessitates efficient use of theatre time and personnel. Clearly, repeated delays and cancellations result in increased costs for hospitals and frustration and anxiety to the patients and their families. Although there is no consensus on the acceptable rate of case cancellation, when analyzing the efficiency of theatre facilities, less than 5% is generally recommended.⁶ In New South Wales, Australia, the benchmark for booked patient cancellations on the day of surgery was less than 2% and cancellation due to medical reasons was set at less than 1%.⁷

In our study most of the on day cancellations were due to potentially avoidable reasons. Lack of availability of OR time was the most common reason for cancellations in our study. We further observed that cancellation due to this reason was due to overrun of previous surgery and overbooking the schedule list. Studies have shown

that simple measures like decreasing the room turn over time, on-time start of the first case of the day, set-up of anaesthesia equipment and setting of case trolleys performed in parallel reduce the rate of case cancellations due to overrun of previous surgery.^{8,9}

Estimating the operating time is also a very important factor to be kept in mind while preparing the OR schedule list for the next working day. The time taken for a particular surgery depends on the skill of the operating surgeon. Less experienced and trainee surgeons take more than expected time. Sometimes, the total duration of surgery increases due to unanticipated surgical complication or technical problems in surgical equipments. A previous study showed that those who underestimated the time needed for operation by an average of 10 minutes had a cancellation rate of 11%, compared to 6% for those who overestimated the time needed.¹⁰ There was no record of the estimated time at scheduling the list and the actual time taken for that surgery in our study. A further study can be done to compare each surgeon's estimated surgery time at the time of scheduling the OR list against the actual time taken.

A study by Pandit JJ, Carrey A⁵ estimated that overbooking a list was common (50%) due to waiting list pressures and to avoid any perception that the surgical team was not hardworking. Overbooking can be minimized by taking surgeon, anaesthesia, patient and theatre facilities into account whenever preparing the schedule list.

Booking of theatre cases are usually done after consultation between juniors and seniors, but this did not happen in our study. 14 cases were cancelled due to non availability of senior surgeons. Most of the times this was due to a sudden leave on the OR day, important meetings which could not be ignored or other administrative commitments. A good and effective communication within the surgical team could have avoided these unnecessary cancellations.

Seven patients could not be operated because the surgical team was busy with emergencies elsewhere. Five patients were cancelled because of the wrong/misdiagnosis, all of which were made by junior doctors. We recommend that the problem of wrong/misdiagnosis can be addressed by simply discussing the surgical cases to a senior member of the surgical team at least once when the patient has obtained PAC clearance and before being scheduled in the OR list.

Cancellations on medical grounds were reported in 24 (10%) cases in our study. A good preoperative assessment and appropriate physician consultation

could have avoided some of these cancellations. In our study 15 patients had an acute change in pulmonary status (URTI/LRTI), 4 patients had newly diagnosed hypertension, 3 patients had fever on the morning of surgery and 2 patients had an acute onset chest pain which had to be investigated further. Improved communication between surgeons, physicians and auxiliary services may expedite preoperative patient evaluation. Dufek et al¹¹ recommended improving the timeliness response by consultant physicians, along with improvement of protocol for preoperative patient evaluation as a means of addressing these problems. Delays in our patients also occurred from inadequacies in organizing laboratory tests and failure to wait for and check the results.

Administrative related reasons accounted for 71 (29.5%) of all cancellations in our study, shortage of autoclaved surgical instruments/linen being the most common reason in this category. All administrative cancellations were due to poor communication and lack of coordination between different departments involved in the efficient functioning of the OR. These reasons can be avoided if proper administrative measures are taken. Further, surgical cancellations due to administrative reasons should be recorded as adverse events of the hospital.

Patient related reasons contributed to 24 (10%) cancellations in our study, patient refusing consent being the most common reason (n = 09) in this category. It is difficult to establish why patients decide against a procedure. Whatever the reasons, improved communication between the patient and operating team would foster a better relationship that may reduce this type of cancellation. Eight procedures were cancelled because the patient had eaten breakfast on the morning of surgery. Again, effective communication about the preoperative instructions between the patient and the surgical team minimize these embarrassing events.

The main limitation of this study was that it was retrospective, though reasons of cancellations were documented adequately in 240 (97.5%) cases. Appreciation of the reasons for cancellation on the day surgery can improve theatre utilization by permitting administrators and clinicians to anticipate those cases in which problems might arise so that essential attention can be paid to them.

This study has identified common and avoidable causes of cancellation of general surgical cases. We recommend the number of cancellations can be reduced and theatre utilization improved:

1. By establishing good and effective preoperative assessment protocols and clinics.
2. Improved communication with patients about the proposed surgery and the preoperative instructions to be followed.
3. Ensuring that all patients are seen by consultants before scheduling them in the list.
4. Avoiding overbooking of the list.
5. Difficult cases (anticipated long surgeries, patients with poor general condition or comorbidities or difficult airway) be discussed with the concerned anaesthetist one day prior to surgery.
6. Better coordination between the surgeon, anaesthetist and the OR staff.
7. Repeatedly reviewing and readdressing the reasons of cancellation.

CONCLUSION

On the day cancellations of elective general surgical cases was a significant problem at this hospital. Identifying and addressing the cause improves the efficiency of theatre facilities. Case cancellations can be reduced by improving preoperative assessment, proper scheduling of cases and better interdepartmental coordination.

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