

Routine surgery cancellations: A one-year prospective study with 5-year data review for reasons, in a 750 bedded tertiary center

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Abstract

Background: cancellation of operations is one of the major problems in every hospital. It affects patients financially and mentally. It also affects hospital in the form of wastage of resources. Our study purpose is to find out the causes and ways to prevent it. **Methods:** Cancellations of elective procedures and the reasons for it were identified from the data collected from the study period which includes one year prospective study (march 2018-march 2019) and 5 years retrospective study. **Results:** From the study we found out that lack of operating time was the main reason for cancellation (58% of cancelled cases). 22.2% cancellations were due to change in medical condition of patient where as in 9.8% patient did not turnup for surgery. Other reasons were change in surgical plan (3.2%), patient refusal (2.9%), device failure (2.8%), and unavailability of surgeons (1.1%). **Conclusion:** By proper planning, team work, efficient management, effective utilisation of resources and proper communication between staff and patient can prevent or limit the number of avoidable cancellations of surgeries. Efforts should be taken to conduct regular audits to understand how well the OTs are functioning and measures should be taken to solve any problems that affects the effective functioning of OTs.

Key Word: cancellation, surgery, hospital, operating time, device failure

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among these. This can invariably affect both patients and hospital emotionally and economically. Our study is to find reasons for these late cancellations in a 750 bedded hospital and how it affects the patients and hospital and proposes strategies to cut their incidence.

MATERIALS AND METHODS

This was a 5-year data overview and one-year prospective study (march 2018 -march 2019) done in a tertiary care medical college hospital, a 750 bedded hospital in Gujarat, India. Institutional ethical committee (IEC) clearance taken before starting the study. Only ASA I and ASA II grade, planned surgeries were included in our study. All patients in the elective list had undergone a preoperative evaluation. Patients presenting complaints, surgical history and medical history were taken and other medical records and investigation report documented. Detailed physical examination and required investigations were done and documented. Anaesthesia plan discussed with the patient and consent with ASA grading taken. On the day of surgery patient was reassessed and if patient

INTRODUCTION

Cancellation of surgeries is a major issue faced in health care sector across the globe. Cancellation of scheduled operation in the last minute, even in some cases patients, doctors and staffs are all set for operation, but the operation is cancelled/postponed on OT table. These late cancellations can be due to many reasons which includes lack of operating time, device failure, lack of availability of surgeon, change in health conditions of patient are few

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needed further workup or optimization both patient and surgeon were informed and these patients were reviewed later. Patient who are fit was shifted to operation theatre and all monitor gadgets (NIBP, pulse oximeter, ECG leads etc) were attached. Now the patient who had developed any health issues like abrupt rise in blood pressure, arrhythmias or patient refusal due to severe anxiety, instrument failure, unavailability of surgeon etc, such patients were included in our data. Patient informed consent was taken before including them in the study. Further, the effect of these cancellations on patients and doctor were assessed with the help of questionnaire and it was validated. Taking the previous 5-year data from the records available in our hospital and 1-year prospective study (march 2018 to march 2019) for these cancellations, detailed analysis had been done to find out the various causes and possible ways to reduce the number of late cancellations of operations in our hospital.

OBSERVATION AND RESULTS

A Total of 54122 surgeries were posted for elective surgeries over study period of 6 years. The total number of operations done in the hospital was 44382. And the total number of operations cancelled were 9740 (17.99%) which means an average of 5.7 cancellations of operations per day (after excluding the holidays). Out of these, 5649 (58%) cases the reason was lack of operating time. And 2162 (22.2%) cases were due to change in medical condition of patients. 954 (9.8%) patients did not turn up for operation during the study period. 312 (3.2%) surgeries were cancelled as there was a change in surgical plan. Due to equipment failure 272 (2.8%) operations were cancelled. And 282 (2.9%) cases were due to patient refusal. In 107 (1.1%) cases, unavailability of surgeon was the reason for cancellations. From our study we found out that out of the surgeries cancelled in our hospital, orthopaedics had more number of cancellations 3678(37.76%) and cancellation in general surgery was 3146 (32.3%) cases. ENT with 1130 (11.6%) cases and plastic surgery with 604 (6.2%) cancelled cases. The cancelled cases in urology was 462 (4.74%) and that of gynaecology was 526 (5.4%) cases. Ophthalmology had less number of cancelled cases 194 (2%).

Table 1: Reasons for cancellations of surgeries

Lack of operating time	5649(58%)
Change in medical condition of patient	2162(22.2%)
Patient did not turn up	954(9.8%)
Change in surgical plan	312(3.2%)
Patient refusal	282(2.9%)
Device failure	272(2.8%)
Unavailability of surgeon	107(1.1%)

Table 2: Speciality wise cancellation of surgeries

Speciality	No of Scheduled surgeries	No of cancelled surgeries
Orthopaedics	14613(27%)	3678 (37.76%)
General surgery	12231 (22.6%)	3146 (32.3%)
ENT	7740(14.3%)	1130 (11.6%)
Plastic surgery	6332(11.7%)	604(6.2%)
Urology	4439(8.2%)	462 (4.74%)
Gynaecology	5845 (10.8%)	526 (5.4%)
Ophthalmology	2922 (5.4%)	194 (2%)
TOTAL	54122 (100%)	9740 (100%)

DISCUSSION

Cancellation of operations have financial and psychological impact over patients and relatives. Unexpected cancellation can cause frustration and sadness in patients and it equally affects relatives as these cancellations can affect the financial or family lives as they might have other plans on the postponed date of cancelled surgeries¹. It can affect hospital also as these cancellation causes wastage of resources. Avoiding cancellations are essential step to avoid these problems. From our study we noticed that the main reason for cancellations in our hospital was lack of operating time^{1,2,3,5,11}. We found out few reasons for these like posting many long elective procedures on the same day which delays other operations, late start of operations due to unavailability of doctors, technical and instrumental problems, inadequate NBM status of patients^{1,3,4,5}. Time lag between surgeries can also be there for OT preparation and cleaning. Delay in time taken for cleaning and preparing the operation theatre for next surgery, lack of surgical linen and other instruments also causes lack of operating time. These can be avoided by team approach between surgeons, anaesthesiologists and OT staffs for avoiding unnecessary delays that can cause lack of operating time^{3,4,13,15,16}. Surgeons should be careful while preparing the OT list as too many lengthy procedures on same day will definitely delays or causes difficulty in finishing surgeries on time which invariably leads to cancellation of surgeries. It is advisable to make a list with operations that is expected to finish on time rather than filling the list with lengthy procedures.^{1,5,6,9,10} Time lag between the operations can be due to delay in recovery from anaesthesia or delay in shifting patient from operation theatre. Overlap induction can be tried by anaesthesiologist to save time for the next operation when the first is still going on. However, it requires more staffsandpreparations.^{3,11} Some surgeries take longer duration than the expected especially in inexperienced hands. Surgeries definitely depends on the skills of operating surgeon. A good experienced hands will finish surgeries earliest than the inexperienced. Sometimes duration exceeded due to anaesthetic or surgical

complications or the junior doctors being allowed to do lengthy procedures³. These will further delay the other operations on the list. Sometimes the surgeon who was expected to do the operation will not be available due to his/her personal problems or being called up to do some emergency surgeries which delays the elective operations^{3,7}. Though this may not happen always it is the responsibility of the operating surgeon to inform the absence in time so that another operation or surgeon can fill the slot. Instruments/equipment's not available e.g. orthopaedic implants, failure of equipment's e.g. laparoscopic equipment's, x-ray machines etc was another main reason for lack of operating time. Operation theatre in-charge should have proper control over these issues and correcting technical problems and proper maintenance of equipment's and instruments^{3,5}. Sometimes patient was not kept required fasting period because of either improper guidance by surgeons or patient didn't follow the instructions. This leads to either delay in taking patients inside operation theatre or postponement of surgeries¹³. Proper guidance and instructions during preoperative assessment by anaesthesiologists and by surgeons can avoid these problems¹⁴. During preanesthetic check-up anaesthesiologists asks for medical optimisation for hypertension, high blood sugar level, respiratory tract infections etc if needed for the patient. Most of the times patients will be posted for surgeries without proper optimization and invariably these cases will be cancelled or postponed^{1,3,4,5,6}. At times patients will be medically fit for operations, but after shifting inside operation theatre there will be unexpected changes in health conditions of patients like rise in blood pressure, arrhythmias etc. Patient will be asked for further follow-up and optimisation if required. These unexpected cancellations can cause mental trauma, financial problems to the patients and wastage of resources to the hospital. Patient refusal was another reason we found for late cancellation. Due to over anxiety or fear patients will refuse to give consent for operations. Proper explanations and reducing anxiety by psychological and pharmacological measures can avoid these problems to an extent^{3,4}. At times patients will not turn up for operations on the day of surgery due to some problems. These are mostly due to personal issues, family problems, change of mind, fear etc. One possible solution is proper communication with the patient, effective counselling and facilitate patient's compliance with surgical procedures. Patient absenteeism in the last moment is a difficult issue to solve³. Some senior consultants disagree with the surgical plan of other surgeons or junior residents since most of the time operation list is made by them and not the operating surgeon. This leads to change in surgical plan in last moment by the operating surgeon^{1,3}. The new

plan might require further optimization, or more preparations which either delays the operating time or postponement of surgery. Proper communication between the surgeons and between operating surgeon and junior doctors can avoid these problems.

CONCLUSION

Cancellation of operations invariably reflects ineffective hospital management or organisation system. By proper planning, team work, efficient management, effective utilisation of resources and proper communication between staff and patient can prevent or limit the number of avoidable cancellations of surgeries. Efforts should be taken to conduct regular audits to understand how well the OTs are functioning and measures should be taken to solve any problems that affects the effective functioning of OTs.

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