Original Article

Reasons for Cancellation of Operation in a 235 Bedded Public Sector Hospital Dedicated for Gynaecology and Obstetrics in Lahore

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Objective: To evaluate the reasons for cancellation of elective surgical operation of the patients who presents for pre-Anaesthesia evaluation one day before surgery or on the day of surgery in a 235 bedded public sector hospital in Lahore..

Methods: The medical records of all the patients, from 1st June 2014 to 30th May 2015, who had their operations cancelled one day before surgery or on the day of surgery in all gynaecology and obstetrics units of the hospital, were audited prospectively. The number of operation cancelled and reasons for cancellation were documented in detail.

Results: 2160 patients were scheduled for elective surgical procedures during the study period of one year; 204 (9.4 %) of these were cancelled one day before surgery during pre-Anaesthesia fitness or on the day of surgery. The most common cause of cancellation was inadequate patient preparation. 59 (28.92%) patients were cancelled as they were not adequately prepared for surgery as per anesthetist advice (incomplete NPO, Investigations or referrals required). The second most common cause of cancellation was the un optimized medical status of the patients53 (25.98%). 36(17.65%) cancellations were because of equipment failure/Electricity shutdown; 17 (8.33%) cancellations due to lack of operation theater time; 16 (7.85%) were cancelled due to patient's refusal/patient left against medical advice; 12 (5.88%) were cancelled by the surgeon due to a change in the surgical plan and 11 (5.39%)patients were cancelled due to non-availability of surgeon.

Conclusions: Most causes of cancellations of operations are preventable.

Keywords: Cancellation, elective surgical operations, gynaecology and obstetrics.

Introduction

Operation theater is the prime and most sensitive area of any hospital in terms of human resources and finances from hospital budget. However, most of the time operation theaters are underutilized and are unable to give their maximum output in accordance to their actual functioning capacity. At times patients scheduled for surgeries from elective and waiting list are postponed.[1,2] A significant amount of hard work is required to prepare the patients for an elective surgical procedure pre operatively. This includes the review of patient notes, necessary Investigations, consultant advice. At the same time OT staff must ensure the availability of surgical instruments, monitors, drugs and linen. The ward staff should feel responsible regarding the preparation of the patient shifting to operation theaters according to scheduled operation list. Last minute cancellations result in inefficient use of resources, not in the interests of the patient or the hospital, and result in anxiety, agitation and financial loss to the family and hospital.[3]

Cancellation of elective operations reflects the in efficient quality care and poor management. The reported incidence of cancellation in different hospitals ranges from 10% to 40%. There are many reasons of cancellation of elective surgical cases; and they differ from hospital to hospital.[4]

Un-anticipated operating room (OR) cancellations are divided into avoidable cancellations (e.g., scheduling errors, equipment shortages, and inadequate preoperative evaluation) and unavoidable cancellations (e.g., emergency cases, unexpected changes in the patient's medical status, or patient non appearance). The most common cause of cancellation of surgical procedure is lack of OR time.[4] The aim of this prospective study was to analyze the causes of cancellation of elective surgical procedures in a mono disciplinary 235 bedded government hospital and to suggest measures for optimal utilization of or time.

Methods

All the patients scheduled to undergo elective surgical procedures, between 1st May 2014 to 30th June 2015

were include in the study at Lady Walingdon Hospital, Lahore. This is tertiary care 235 bedded hospital dedicated for gynaecology & obstetric patients. Patients were included prospectively in the study. As this study was considered as audit under quality assurance project, it did not require approval of the hospital ethics committee.

A formal pre anesthesia assessment was carried out on every patient a day before surgery scheduled in MOT undergoing general anaesthesia, monitored anaesthesia care or neuraxial blocks. The preoperative assessment of the patients referred from surgical wards, labour rooms or unit ICUs was done in the preoperative holding area. The preoperative assessment was carried out in the structured manner on specially designed Performa of pre anaesthesia assessment. The patients were assigned ASA (American Society of Anaesthesiologists) risk score after pre-operative assessment and review by the consultant if required. All ASA 3 or higher patients were examined by the anaesthesia consultant before declaring her fit or unfit for surgery. Special investigations, referrals, delays, postponement or need for blood/blood products were advised after discussing with the consultant in charge. Final decision regarding postponement or cancellation was given after mutual consultation between anaesthesia and surgical consultant.

On the day of intended surgery, all the patients were shifted to the preoperative area in the morning after 8 AM. In the preoperative holding area, the anaesthesia medical officer reviewed the vital signs, GCS, current medications. Patients of ASA class III and above were re-examined and their charts for current status of disease were also reviewed along with NPO status. The anaesthesia consultant confirmed with the medical officer in case there is a change in medical status of the patient after re examination and investigation review. All the patients who did not declared fit for surgery were documented in "Postponed Patients Record" register dedicated for this study. The patient and family were counseled regarding the change in the status and postponement. All the changes in status, postponement, further treatment, referral or future anaesthesia plan were documented with date and time. Data on operations were obtained from the OT register maintained by the OT incharge nurse in which surgical record were written including patient and surgeon details along with intended procedure.

Cancellations were classified as:

- Potentially avoidable reasons could be due to failure to adequately prepare the patient. (Poorly scheduled OT timings, lack of postoperative beds, list error, administrative cause, equipment or transport problem, communication failure, patients medical condition not optimized, and surgeons un availability in O.R).
- Non avoidable reasons which were outside the control of hospital staff, such as that the patient did not follow the NPO advise, refusal by patient, patient clinical status change, emergency priority etc.

As this classification was based on the detailed reason given for the cancellation, some of the three major categories appear in both the avoidable and unavoidable groups.

Patients factors = Patients having medical. problems, inadequate preparation, incomplete NPO and refusal etc.

Manpower factors = Lack of availability of medical and paramedical staff.

Hospital factors = Equipment failure, lack of surgical instruments or linen and interruption in electric power supply or generator malfunction and lack of operation theater time.

Results

A total of 2160 patients were scheduled for elective surgical procedures during the one year of study period. The total number of surgical operations performed was 1956. The total number of patients cancelled was 204 (9.4 %). These patients were cancelled one day before surgery during pre-Anaesthesia fitness or on the day of surgery. The most common cause of cancellation was inadequate patient preparation. 59 (28.92%) patients were cancelled as they were not ready for surgery.

The various causes in this most common category included incomplete NPO, Investigations or referrals required. The second most common cause of cancellation was the patient's medical condition including 53 (25.98%) patients who were cancelled for surgery due to uncontrolled hypertension, uncontrolled blood sugar levels due to diabetes mellitus, active respiratory tract infections and other various medical conditions. 36 (17.65%) cancellations were because of equipment failure/Electricity shutdown which included Anaesthesia machine malfunction or failure, oxygen supply interruption, lack of surgical instruments or linen and interruption in electric power supply or generator malfunction. 17 (8.33%) cancellations due to lack of operation theatre time which is usually ends at 2:00 PM daily and 12:00 Noon at Friday. 16 (7.85%)

were cancelled due to patient's refusal/patient left against medical advice.

12 (5.88%) were cancelled by the surgeon due to a change in the surgical plan and 11 (5.39%) patients were cancelled due to non-availability of surgeon. **(Table.1,2)** shows whether the reason of postponement of surgery was avoidable or unavoidable. In our study 60.29% cancellations (N=123) were avoidable, while 39.71% (N=81) cancellations were unavoidable. The hospital has 3 gynaecology units (Unit 1, 2 and 3). As per hospital routine, two elective surgical lists are performed every week by each unit from Monday to Saturday with 3 days gap in between their surgical list. Therefore every patient who was cancelled from elective surgical list had to face the delay of at least 3 days to be re-scheduled on next surgical list. In our study, the average delay faced by the cancelled patients was 6.26 days with the range of 3 days to 14 days. The proportion of cancelled patients during study period was 29.41% (n=60), 36.76% (n=75) and 33.83% (n=69) from Unit 1, 2 and 3 respectively.

The factors contributed in cancellation included:

Patients factors = 68.63% (n=140). Patients having medical problems, inadequate preparation, incomplete NPO and refusal etc

Manpower factors= 5.39% (n=11). Lack of availability of medical and paramedical staff

Hospital factors= 25.98% (n=53). Equipment failure, lack of surgical instruments or linen and interruption in electric power supply or generator malfunction and lack of operation theater time .

Table-1: Reasons for cancellation of surgery.

Factors attributed for cancellation	Reasons of cancellation		No. Of Patients	Cancellation (%)	Cancellation Avoidable/ Unavoidable
Patient factors	Patients not prepared	Investigations required	23	11.27%	Avoidable
N=140	N=59	Referral required (Med. Surg. Or others)	28	13.73%	Avoidable
68.63%	28.92%	Incomplete NPO	08	3.92%	Avoidable
	Medical Reasons	Uncontrolled HTN	38	18.63%	Unavoidable
	N=53	Uncontrolled DM	09	4.41%	Unavoidable
	25.98%	RTI & Others	06	2.94%	Unavoidable
	Surgical Reasons	Change of surg. Plan	12	5.88%	Unavoidable
	Patients refusal /LAMA		16	5.85%	Unavoidable
Hospital factors	Equipment failure/electricity shutdown		36	17.65%	Avoidable
N-53 25.98%	Lac of OT Time		17	8.33%	Avoidable
Manpower factors	Surgeon not available		11	5.39%	Avoidable
N-11 5.39%	Anaesthetist not availble		0	0%	-

Table-2: Avoidable / Non Avoidable factors for postponement of surgery.

	Potentially avoidable	Unavoidable
Patient factors n=140 68.63%	N=59 42.14%	N=81 57.86%
Hospital Factors n=53 25.98%	N=53 100%	–
Manpower factors n=11 5.39%	N=11 100%	–
Total n=204	N=123 60.29%	N=81 39.71%

Discussion

For a well organized surgical care in a tertiary care hospital there should be a low rate of cancellation of surgical procedures. The postponement of elective surgeries results in underutilization of facility and the efficiency of the operation theaters will be compromised. As a result the number of patients will keep on increasing on the waiting list and hence will result in an increase financial burden on the patients and families.[1]

This is a known fact that underutilization of resources will have a direct impact on the lower income groups. These low socio economic groups in third world countries are dependent for their health care services primarily on public sector hospital. So if a facility or theater equipment in a public sector hospital is not utilized to its full extent, the ultimate cost will be beard by the patients. So the most important step is to avoid postponement of the patients on elective surgical list.

The National Audit Office in Britain reviewed five district health authorities, and concluded that OTs

were not used even half of their capacity instead of long waiting lists.[1,5] The undue postponements may results in financial burden and psychological distress for the patients and the families. Mostly the elective surgical procedures are cancelled on 24-hour notice. The patients and the families feel apprehensive, scared, dishearted and bitter. Even in developed countries like UK, 8% of scheduled elective surgeries are cancelled.[1]

Conclusion

This audit found that most of the causes of cancellation of operations are avoidable. Careful patient preparation can significantly reduce the un-anticipated cancellation of elective operation list. Before formation of OT list, current existing limitations in human and material resources should be kept in consideration so that under-utilization of existing resources can be minimized due to unwanted cancellation.

The medical problems requiring consultation or referral can be identified before time by careful history taking and examination at the time of admission. The number of cancellations on medical grounds can be minimized by giving proper attention to the patient's other medical conditions in addition to the specific surgical cause for which patient had admitted. The compliance and effectiveness of the medical treatment being given in the surgical ward can be assessed by repeated medical consultation/ referrals. The patients requiring medical optimization should not be re-scheduled immediately without waiting for the medical problems to get optimized.

To avoid under or over utilization of OT facilities, number of patients enlisted in OT list should be justified according to the capacity of various OT facilities.

The malfunctioning of equipment or non-availability of drugs or others instruments necessary for scheduled surgical list should be should be identified reasonably before time by the responsible persons. If the equipments or manpower limitation created temporarily, it should be informed timely to concerned people prior to preparation of OT list.

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