



Retrospective analysis for the reasons for surgeries cancellation in the operating theater room in

St John eye hospital, Palestine: Gaza.

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Abstract

Study Objective: This study aims to reduce cancellation rate in the operations rooms (OR), among analyzing the reasons for cancellation of surgeries, and to determine the effect on patient outcomes.

Design: Retrospective analysis, applying open coding thematic analysis for theatre records.

Measurements: A retrospective analysis of cancellations of scheduled elective and urgent operations was done using theatre records from January 2017 to November 2019. The reasons for cancellation were examined and classified into eleven main canceling reason groups which are (Medically unfit, pre op not complete, infected wound, need GA, Change plan, eye Discharge, un-cooperative, High IOP, Logistic shortage, Refused to sign, Gaza Crisis).

Main Results and Conclusions: The total numbers of surgeries for the study period were 3831 operations, and 8.53 % were cancelled or postponed (327 cases). Lack of medical clearance and Unfit for surgery (51.3%) was the most common reason for cancellation then Change the plan of treatment by the surgeon (14.3%) either risk outweighed the benefits of surgery, or alternative treatments were used. So that, improving the preoperative evaluations may have significant effect to reduce the number of cancellations after the patient has entered the operating room.

Keywords: retrospective, cancellation, preoperative, Palestine

1. Introduction

Every hospital's administration seeks to attain excellence in operating theater's efficiency, but this would be difficult with a high cancellation rate of elective surgical operations. The operating theater is the hospital's largest cost center and the largest source of income. It is recommended to recognize the efficiency of the operating theater and to reduce the high cost and increase the source of revenue [1]. In the developing countries, cancellation of elective surgical operations is common and most of these cancellations are due to preventable causes. Cancellation of elective operations is known to increase cost, decrease efficiency, and waste time and resources; it may also cause significant emotional distress and trauma to the patient and his family, in addition to the financial increased burden and social disturbances [2, 3]. The financial burden is increased by repetition of preoperative investigations and preparations. The social burden is caused by the good number of the patient's family members and friends who accompany the patient to support him during and after operation.

In Gaza as in many developing countries where the families are extended, members of the family feel obliged to come to visit and support their patient during surgery. This requires leave from work and financial cost. The suffering of patients who had cancelled operations might be increased and the chances of achieving optimum results might be reduced. Cancellation may prolong the postoperative rehabilitation period, and it may also lead to loss of trust and confidence in the hospital and surgeon and contribute to the feeling of insecurity and uncertainty and hence increasing the fear of the patient [4-6]. The most damaging impact of cancellation of surgery is when cancellation occurs after patient's

preparation (i.e., on the day of surgery in the operating room [OR]) [7].

Cancellation rates vary widely between different types and capacities of hospitals and depend on the surgical subspecialty, individual surgeons, how data were collected, and how cancellation was defined [5]. The rate of cancellation will be high when nonattendance of patients and/or the administrations' related causes are included. Data whether collected prospectively or retrospectively may also affect the cancellation's rates [5, 8]. The magnitude of the problem of the cancellations of the surgical operations varies significantly from 1% to up to 25% for outpatients and 66% for inpatients. This variation of the rates of cancellations of elective surgical operations also depends on the availability of staff and patients' medical conditions [9]. Different studies reported different incidences, reasons, and causes of cancellations of elective surgical operations [1-17].

To reduce the rates of canceled surgical operations and improve the operating theater efficiency, the reasons and causes of cancellation should be recognized, analyzed, and taken appropriate measures that would help reducing the magnitude of the problem. Late cancellations or postponements of elective surgery will always be present due to inter current diseases, work commitment, and social obligations of the health care providers and patients.

St John of Jerusalem Eye Hospital Group is the only charitable provider of expert eye care in the West Bank, Gaza and East Jerusalem, treating patients regardless of ethnicity, religion or ability to pay. St John Gaza Hospital has been providing charitable eye care for the 1.8 million residents of Gaza since 1992. Every year SJEHG sees over 32,000 patients in Gaza, diagnosing debilitating eye conditions such

as cataracts, glaucoma, corneal scarring and diabetic retinopathy. SJEHG charges subsidized prices for consultations and procedures for all and completely waives fees for those who cannot afford to make any contribution. In spite of the difficulties faced by our staff, our hospital operates with the same standards of care as any hospital anywhere in the world, conducting a busy outpatients department and performing day case surgery.

St John Gaza Hospital works alongside SJEHG’s hospital in Jerusalem. If patients require complex surgical intervention, we help them to negotiate the complicated system of travel permits to allow patients to access Jerusalem for treatment. The demand for our sight-saving services in Gaza is increasing every year. In 2008 our hospital saw just over 16,000 patients and performed no major operations. In 2018, we saw 30,200 outpatients and performed 1,200 major operations, a 36% increase on the previous year. We have also been able to introduce a number of subspecialties to the region for the first time.

The main operation theater of St. John Gaza operates 5 days/week, Sunday–Thursday, from 7 am to 3 pm. The aims of the present study were to investigate and analyze the reasons and causes of cancellation of the elective surgical operations, establish its extent, and suggest measures to be adopted to reduce rates and improve operating theater

efficiency, in our hospital at St John, Gaza [18].

Methods

A retrospective evaluation of cancellations of scheduled elective and urgent operations was done using theatre records from January 2017 to November 2019. The reasons for cancellation were examined by applying open coding thematic analysis for OR records so the reasons of cancellation were grouped into eleven main reasons. This was a retrospective study done at St John eye Hospital – Gaza. Procedures that did not require an anesthetist and those cancelled from the ward were excluded from the study. The patients were posted for surgery only after they had obtained pre-anesthetic checkup (PAC) clearance. 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 [19].

Results

A total of 3831 surgeries were scheduled during the study period. Cancellations occurred in 327 (8.5%) cases. The reasons for cancellation were grouped into three categories, first Anesthesiologist; the most common of cancellation by 202 patients (61.7%), followed by Ophthalmologist 98 patients (29.9%) then other category 27 patients (8.2%).Table 1

Table 1: Januray 2017- November 2019 cancelation categories and ranks

#	cancelled by	Reason	2017	2018	2019	total	%of canellation from 327	Rank of total
1	Anesthesiologist	Medically un fit	55	68	45	168	51.37614679	1
2		pre op not complete	6	12	7	25	7.645259939	4
3		infected wound	1	1	4	6	1.834862385	7
4		need GA	2	0	1	3	0.917431193	9
S-T		Sub-Total	64	81	57	202	61.77370031	G1
S	Ophthamologist	Change plan	11	29	7	47	14.37308869	2
6		eye discharge	9	21	12	42	12.8440367	3
7		un-cooparative	1	1	5	7	2.140672783	6
8		High IOP	1	0	1	2	0.611620795	10
S-T	Sub-Total	22	51	25	98	29.96941896	G2	
9	Others	Logistic shortage	2	12	5	19	5.810397554	5
10		Refused to sign	1	4	0	5	1.529051988	8
11		Gaza Crisis	0	0	3	3	0.917431193	9
S-T		Sub-Total	3	16	8	27	8.256880734	G3
Total			89	148	90	327	100	

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 [19]. 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 bench mark 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]. Different rates of cancellation were reported in the literature, with wide variations depending on the study design, type of hospital and its level and capacity, how cancellation is defined, type of patients (inpatient or outpatient) and on the medical subspecialty. A range of 10–40% was reported as an overall rate of cancellation of elective surgical operations [20, 21]

In our study most of the on day cancellations were due to potentially avoidable reasons. The patients medically unfit to

the surgery were the most common reason for cancellations in our study. We further observed that cancellation due to this reason was due to lake of awareness to the patient’s previous surgery about the surgery contraindications, Cancellations on medical grounds were reported in 168 (51.3%) cases in our study. A good preoperative assessment and appropriate physician consultation could have avoided some of these cancellations. In our study patients had an acute change in pulmonary status (URTI/LRTI), uncontrolled hypertension, uncontrolled diabetes mellitus, patients had fever on the morning of surgery, severe Cough and patients had an acute onset chest pain all these cases need more investigation (Table 2). Improved communication between surgeons, physicians and auxiliary services may expedite preoperative Patient evaluation. Dufeket *al* [22] 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.

Table 2: 2017-2019 Medically un-fit Break down

#	cancelled by	Reason	2017	2018	2019	total	% of Cancellation from 327
1	Medically un-fit	Abnormal lab. Test	2	1	5	8	4.761904762
2		Diabetes mellitus Mr	6	9	6	21	12.5
3		Hypertension IIM	17	26	9	52	30.95238095
4		Others (Fever, URT, cough. Etc.)	30	32	25	87	51.78571429
		Total	55	68	45	168	100

Ophthalmologist who did the surgery cancelled the surgeries of 98 patients (29.9%) related many reasons the most of this reasons changing in treatment plan (14.3%) like (for follow up, referred to Jerusalem, guarded prognosis, for another doctor, no benefit from surgeryetc) most of this cancellation can be prevented by establishing good and effective preoperative assessment protocols and clinics, ensuring that all patients are seen by surgeon before scheduling them in the list then conjunctivitis and severe blepharitis (12.8%), uncooperative patient before the start of surgeries (2.1%).

Other related reasons accounted for 27 (8.2%) of all cancellations in our study, shortage of logistics or medications out of order like microscope and cross linking, no availability of mutamycin, avastin, shortage surgical instruments and the political situation in Gaza. (Table1) 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 by regular maintenance for all machines by the medical engineer, must have good stock of medication to prevent any shortage during the closure of borders. Patient refusing consent being their 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^[19].

This study has identified common and avoidable causes of cancellation of ophthalmic hospital cases cancellations can be reduced and theatre utilization improved by:

1. 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 the surgeon before scheduling them in the list.
4. Better coordination between all related department (administration, daycare, theatre, CSSD)
5. Repeatedly reviewing and readdressing the reasons of cancellation.

There were several limitations to this study. This was a retrospective, single-facility study, and the information was obtained only from medical records. No statistical analysis was performed.

Conclusion

On the day cancellations of elective general surgical cases was significant problem. 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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