

Original Article

Cancelled elective surgical operations at El Obeid Hospital, Western Sudan

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Abstract

Background

Cancellation of scheduled surgical operations on the day of surgery at hospitals upsets the patients and causes great concern to the relatives. It is also a major drain on health resources as the theatre costs increase and its efficiency decreases. The objective of this study is to estimate the frequency of cancellation of scheduled elective surgical operations on the day of surgery and to study the reasons for cancellation at El Obeid Teaching Hospital, Western Sudan.

Patients and Methods

This is a prospective observational study. All the patients who had their major general surgical operations cancelled on the day of surgery during the year 2007 were included. The information were collected in a pre-formed questionnaire containing the patient characteristics, clinical diagnosis, intended operation, proposed anaesthesia and the exact reasons for cancellation.

Results

There were 1633 elective major general surgical operations performed during the study period. 162 cases (9.9%) were

cancelled, eighty nine patients (55%) were females. The mean age was 46.5 years.

The causes of cancellations were 34.6% patient related, 32.1% staff related and 33.3% procedural reasons.

Conclusions

Cancellation of scheduled surgical operations on the day of surgery is a significant problem which annoys patients, increases the costs and decreases the efficiency of utilization of the theatre facilities. The reasons for cancellation were discussed. With better arrangements, the majority of the reasons can be avoided.

Key words: Scheduled surgery, Operative lists.

Introduction

Cancellation of surgical operations in hospitals is a significant problem with many undesirable consequences⁽¹⁾. Cancelled operations can annoy patients and their families. They are a major drain on health resources⁽²⁾, increases theatre costs⁽³⁾, results in wasted operating room time and decreases efficiency^(4,5). However, the performance of a surgical operation on schedule requires a complex process of logistics. In spite of the extensive available literature on the preparation of surgical patients and on the performance of surgical procedures, the focus given to the cancellation of planned surgical operations has been quiet restricted globally⁽⁶⁾.

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The aim of this study was to estimate the magnitude of the problem in El Obeid Teaching Hospital and to identify the possible reasons so as to suggest strategies to reduce the cancellation rate.

Patients and Methods

El Obeid Teaching Hospital is the main referral hospital in the Kordofan States of Western Sudan. This is a prospective study. The major surgical operations which were cancelled on the day of surgery during the year 2007 were included. The operation was defined as cancelled if it was not done on the day on which operating time was allocated to the patient and scheduled in the operative list prepared the day before. It included postponed operations. A pre-prepared questionnaire was completed by the surgical registrar for every operation cancelled to include the patient's characteristics, the clinical diagnosis, the type of operation, anaesthesia intended and the reasons for cancellation which were classified as shown below:

Causes of cancellation

1. Patients reasons;

- Co-morbid states.
- Periods / pregnancy.
- Change in the clinical status of the patient (specify).
- Cancellation by the patient / relatives.
- Patient didn't show up.

2. Staff reasons;

- Over booking.
- Inadequate pre-operative preparation.
- Blood not ready.
- No consent.
- Absence of empty post-operative beds.

3. Procedures reasons;

- Absent surgeon or anaesthetist.

List error.

Lack of theatre time (over-run of previous operation).

Emergency priority.

Administrative cause.

The information regarding the number and characteristics of the surgical operations performed during the study period were obtained from the hospital department of medical statistics. The data were analyzed using the SPSS PC packages.

Results

During the study period 1633 major general surgical operations were performed. 162 major operations were cancelled (9.9%) as shown in Table 1. Eighty nine patients (55%) were females. The age range was from 2 to 80 years with the mean of 46.5 years \pm SD 14.

The operations cancelled were 30 (18.5%) for hernia repair, 26 (16%) for biliary system, 24 (14.8%) gastrointestinal tract, 12 (7.4%) breast, 20 (12.3%) thyroid and 34 (21%) urology. Other surgical operations like mycetoma, vascular and plastic operations were 16 cases (10%). The causes for cancellations were shown in Table 1, classified as 34.6% patient's related, 32.1% staff related and 33.3% procedural reasons.

Discussion

In this study the cancellation rate of elective general surgical operations was 9.9 % which is similar to a previous report from a developing country⁽⁷⁾. However, cancellation rates ranging between 19% and 33% were reported from other developing countries^(6, 8), compared to rates between 11% and 24% from developed countries^(9,10). The cancellation rate found in this study was

Table 1: Causes of cancelled surgical operations at El Obeid Teaching Hospital, Sudan.

Causes of cancellation	No	%
Co-morbid states.	36	22.2
Change in the clinical status of the patient	12	07.4
Cancellation by the patient / relatives.	04	02.5
Periods / pregnancy.	02	01.2
Patient didn't show up.	02	01.2
Inadequate pre-operative preparation.	44	27.2
Blood not ready.	08	04.9
Over booking.	00	---
Absence of empty post-operative beds.	00	---
No consent.	00	---
Administrative cause.	40	24.7
Lack of theatre time.	09	05.6
List error.	02	01.2
Emergency priority.	02	01.2
Absent surgeon or anaesthetist.	01	00.6
Total	162	100

Table 2: Comparisons between the cancellation rate of surgical operations in this study with the cancellation rates reported by different authors.

	Author	Country	Cancellation Rate in %
1	Zafar A et al ⁽¹⁾	Pakistan	25.0
2	Sanjay P et al ⁽²⁾	UK	14.0
3	Lacqua MJ, Evans JT ⁽⁵⁾	USA	17.0
4	Cavalcante JB ⁽⁶⁾	S. America	33.0
5	Magbool G et al ⁽⁷⁾	Saudi Arabia	09.1
6	Paschoal ML, Gatto MA ⁽⁸⁾	Brazil	19.9
7	Hand R et al ⁽⁹⁾	USA	17.0
8	Aguirre-Cordova JF ⁽¹⁰⁾	Mexico	24.0
9	Schofield WN et al ⁽⁵⁾	Australia	11.9
10	Fersch MB et al ⁽²¹⁾	USA	13.0
11	Doumi EA et al*	Sudan	9.9

* The present study.

compared to cancellation rates reported by different authors as shown in Table 2. 22.2% of the cancelled operations (36 patients) were due to co-morbid states, mainly uncontrolled high blood pressure. Hypertension is certainly associated with an

increased risk of peri-operative morbidity and mortality and a diastolic blood pressure of 110-115 mmHg was considered as a cut-off for postponing anaesthesia⁽¹¹⁾. In a previous study it was found that hypertension was the commonest reason for

deferring surgery, accounting for 16.2% of medical cancellations⁽¹²⁾. Many of the cancelled cases could have been identified earlier and necessary remedies taken to avoid cancellation. The second cause related to patients was recent change in the clinical status (7.4%). The majority of such patients were children who were cancelled for recent chest infection or wheezes.

Among the staff related causes deficiency in pre-operative preparation of the patients accounted for 44 cases (27.2%). The patients were either not adequately prepared, not fasting or necessary tests needed were not performed. Blood not ready was the reason of cancellation of 8 cases (4.9%), mainly due to failure to screen the donors for HIV and/or hepatitis, because kids were not available. The procedures were postponed due to medico-legal concern, rather than because surgery itself was considered as unsafe.

Considering procedural reasons; the commonest causes of cancellations were administrative in 40 patients (24.7%). In details these were electric failure, unavailability of water, theatre gowns and dressings not available, shortage in theatre logistics like disinfectants, gloves and/or suture materials. When analyzed these reasons were due to failure of the hospital administration to recognize the needs of the operative theatre and the indifferent attitudes among the theatre staff. Nine other patients (5.6%) were cancelled due to lack of theatre time due to over-run of the previous operation. A lot of precious time was lost in patient transport in or out of the operative rooms, in induction of anaesthesia, in surgical preparation and draping. The room turn over time may be also reduced if more recovery room beds were made available⁽¹³⁾. In a recent study it was found that only 7% the surgical procedures were started on

time⁽¹⁴⁾. We feel that days had gone when we witnessed the powerful dedicated chief theatre attendant. We need to train and delegate responsibilities to young motivated qualified nurses as 'Sister-in-charge' to take over the administrative responsibility of the operating rooms.

Schofield et al (2005) classified the causes of cancellation of operations as avoidable and non-avoidable⁽¹⁵⁾. In this study non-avoidable causes were recent clinical change in the patient's condition, emergency priority, cancellation by the patient, patients who did not show up, inability to pay fees and cases of unexpected periods or pregnancy; accounted for 13.5%. Accordingly, the majority of the cancellations (86.5%) were potentially avoidable.

Various authors looked into the value, effectiveness and utilization of pre-operative (pre-admission, pre-anaesthetic) clinic visits in order to reduce the operating room cancellations of elective surgeries⁽¹⁶⁻¹⁹⁾. Such clinics may be visited by patients 2-3 weeks before the time scheduled for surgical procedures. The patients need to see a nurse and get clinically assessed by a resident doctor, under the supervision of a consultant anaesthetist. The aim was to evaluate patients with co-morbid illness, to assist in preoperative preparation and improve patient satisfaction by providing information to patients in a relaxed setting⁽²⁰⁾. Ferschl et al reported a cancellation rate of 5.3% in the general operating rooms in patients who visited an anaesthetic pre-operative clinic compared to 13% in patients without a clinic visit ($P < 0.001$)⁽²¹⁾.

In conclusion the efficiency of the operative lists may be improved by maximizing utilization of theatre time and minimizing cancellation rates⁽²²⁾. For that to be achieved the theatre logistics should always be made

available and the administrative control of the operating rooms delegated to young well qualified nurses. Active surveillance should be done by targeting individual persons whose instructions and actions resulted in

cancellations and by monitoring its rate monthly in combined discharge clinics that include anaesthetists and in collaboration with the quality assurance directorate in each hospital.

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