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## **Cancellation of surgery in patients attending the preoperative anaesthesia assessment clinic: A prospective audit**

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### **Abstract**

**Objective:** To find the causes of operating room cancellation in patients attending preoperative anaesthesia clinic and scheduled for surgery at our institution.

**Methods:** This audit included all those patients who presented to the pre anaesthesia clinic with their surgeries planned in the main operating rooms of our hospital. The duration of this audit was two months. Cancelled cases were identified from the operating room lists and the reasons for cancellations were categorized into above mentioned four factors.

**Results:** Fifty five (55) cancellations were identified; patient related factors (58%) were the most frequent cause followed by anaesthetic (22%), surgical (18.2%) and administrative (1.8%) factors. In patients related factors, most common causes appeared to be no-shows and patient's financial issues.

**Conclusion:** Most of the patient related factors were found to be uncontrollable. Anaesthetic related cancellations might be reduced with better communication between anaesthetist themselves and the surgeons. Overbooking of cases and other administrative issues can be reduced with better organizational strategies (JPMA 59:547; 2009).

### **Introduction**

The advantages of preoperative anaesthesia clinics are to optimize medical condition of the patient before surgical procedure,<sup>1</sup> improved patient safety<sup>2</sup> and satisfaction,<sup>3</sup> reduction of resources in terms of preoperative medical consultation, laboratory investigations<sup>4</sup> and reduced length of hospital stay.<sup>5</sup> In addition, preoperative out patient anaesthesia assessment clinic visits have shown to decrease operating room cancellations.<sup>6</sup>

Despite attending the preoperative anaesthesia assessment clinic, cancellations on day of surgery still occur and the causes are multi-factorial. In order to define the processes that can be improved, we conducted an audit to identify the factors that could be responsible for the cancellation of elective surgeries in patients attending preoperative anaesthesia assessment clinic.

This audit was conducted in a five hundred bed tertiary care referral centre. In the main operating room there are eleven theatres and the specialties covered are General surgery, orthopaedics, neurosurgery, obstetrics and gynaecology, vascular surgery, ENT, cardiothoracic surgery, urology and paediatric surgery.

### **Methods**

The preoperative anaesthesia clinic in our institution is conducted daily between Monday and Friday from 0900 to 1730 hours. The clinic is staffed by a first or second year resident and an anaesthesia consultant. The decision

regarding sending the patient to the clinic depends on the surgeons, and varies from weeks to a day before scheduled surgery. Approximately six to seven hundred patients are seen each month. Each patient is interviewed, examined, and his/her laboratory investigations are ordered. For any additional issues, the patient is referred to a respective specialist for consultation and followed up. In spite of this procedure in place, some patients are still cancelled on the day of surgery.

In order to identify the reasons for these cancellations we conducted a prospective audit over a period of two months. All the patients with their surgeries scheduled in the main operating room of the hospital were included. Patients who did not have a scheduled date of surgery at the time of presentation to the out patient preoperative anaesthesia clinic (OPPAC) and patients with surgeries planned on locations other than the main operating room/suite (e.g. MRI, Radiology, CT scan, angiography units) were excluded from this audit.

Preoperative anaesthesia assessment is documented in a pre-designed form which we used for all the patients referred to us (appendix 'a'). This form is kept in the patient's confidential file and is accessible to all the care providers.

Our integral source to identify the cancelled cases was the daily operating room list. Reasons of cancellations were documented in a specified form used for this audit (appendix 'b'). This documentation included the patient's

## Appendix 'a'

### Department of Anesthesiology Aga Khan University Hospital

#### **Audit:**

Postponements in patients who attended the preoperative anaesthesia assessment clinic.

(Only to be filled in case of postponement or cancellation of the surgery/procedure on the scheduled date?)

Please provide complete documentation, use additional sheets if necessary.

#### **Patients Data:**

M.R. #

Name

Age

Sex

ASA Status

#### **Surgery/Procedure related Information:**

Surgery/Procedure:

Surgeons/Physicians Name:

Subspecialty:

Date of surgery:

Date of preoperative assessment:

## Appendix 'b'

### Causes of postponement of Surgery/Procedure:

#### **Patient's related:**

- ◆ No Show ( ) [Patient confirmed to come for surgery a night before the scheduled date, but did not attend the hospital for surgery].
- ◆ Patient's Refusal ( ) [Patient scheduled for surgery, attended preop clinic, but later refused].
- ◆ Patient Unfit for surgery ( ) [Patient was fit when the surgery was planned but later developed infection or other medical or surgical disease that conferred that surgery should not be performed.]
- ◆ Failure to follow preoperative instructions ( ) [Incomplete fasting status, patient on aspirin etc.]
- ◆ No need of surgery ( )

#### **Surgeon's/physician related:**

- ◆ Surgeon Not available ( )
- ◆ Patient requires further surgical workup. ( )

#### **Administrative:**

- ◆ Non-availability of operating room. ( )
- ◆ Non availability of surgical / diagnostic equipment. ( )
- ◆ Non-availability of technician or other support services necessary for a particular surgical procedure ( )

#### **Anaesthesia /Anaesthetist related Issues:**

- ◆ Patient unfit for anaesthesia ( ) [Patient requires optimization, risk stratification, input from other medical or surgical sub specialties.]

- ◆ Senior anaesthetist cover not available. ( )

#### **Any other Reason:** Please specify.

- ◆ 'Scheduled date' is the date of surgery proposed by the surgeon, written on the accommodation request provided to the patients.

divided into patient related factors, anaesthesia related factors, surgeon related factor and administrative factors. Patient related factors were categorized as acute illness, failure to follow preoperative instructions, patient refusals, 'no shows' (failure to attend the surgical appointment by patient without notifying the hospital) and financial constraints. Anaesthesia related factors were categorized if cancellation occurred because the patient was referred for further medical workup and optimization of medical condition either in OPPAC or by the primary anaesthetist (responsible for conducting the anaesthetic) before surgery.

Surgical factors were categorized as non-availability of the surgeon and need for further surgical workup. Administrative factors were categorized as overbooking of the cases on a particular surgical list, non-availability of the operating room due to emergency operations, non-availability of equipments, lack of operating room personnel or support services.

Information regarding the cancellation of surgeries were collected from various sources including; the operating room daily surgical schedule, patients vital signs recording charts, preoperative assessment form, primary physicians, the anaesthetist responsible for the preoperative assessment, the anaesthetist responsible for conducting the case and by contacting patients if required.

## Results

A total of 1258 patients were evaluated in OPPAC in the study duration of two months, out of these 810 patients were scheduled to have surgeries in the main operating rooms. In these 810 patients 55 cancellations (6.7% of scheduled cases) were noted (Table-1).

**Table-1: Reasons for cancellation of surgery in patients who attended the preoperative anaesthesia assessment clinic.**

| Reasons                     | Number of patients (n=55) |
|-----------------------------|---------------------------|
| Patient related factors     | 32                        |
| Anaesthetic related factors | 12                        |
| Surgeons led cancellations  | 9                         |
| Administrative reasons      | 1                         |
| Surgery no longer indicated | 1                         |

Patient related factors accounted for 32 (58%) cancellations. Further break-up of this group showed that 'no-shows' were 40%, patient refusals 3.6%, financial constraints 3.6% and failure to follow preoperative instructions 5.4%. Acute illnesses of the patients were a cause in 5.4% of the cancelled cases.

Anaesthesia related factors accounted for 12 (22%) cancellations. Seventy five percent of these cancellations were done by the preoperative clinic anaesthetist whereas

demographic data, date of preoperative assessment, date of surgery, type of surgery, American Society of Anaesthesiologists (ASA) physical status and the reasons for cancellation of surgery. Reasons for cancellations were

25 % were done by the anaesthetist responsible for conducting the anaesthesia. The reasons for cancellations done by anaesthetist were for cardiac, endocrine and paediatric consultations for further workup and/or optimization before surgery (Table-2).

**Table-2: Breakdown of anaesthesia related cancellations, surgical specialties and ASA status.**

| Sub Specialties | Anaesthetic Cancellations (n=12) | ASA Status |    |     |    |   |
|-----------------|----------------------------------|------------|----|-----|----|---|
|                 |                                  | I          | II | III | IV | V |
| Urology         | 2                                |            |    | 2   |    |   |
| Orthopaedics    | 3                                |            |    | 3   |    |   |
| General surgery | 2                                |            |    | 2   |    |   |
| Gynaecology     | 2                                |            |    | 2   |    |   |
| ENT             | 2                                |            | 1  | 1   |    |   |
| Paediatrics     | 1                                |            | 1  |     |    |   |

Cancellations done by surgeons accounted for 10 (18.2%) of the total cancellations. Surgery related factors were unplanned booking (5.45%), patient requiring further surgical workup (3.6%), surgeon busy in emergency surgery (3.6%) and surgeon's non availability due to other reasons (1.8%). One case was cancelled because the surgery was no longer indicated (1.8%).

Considering the ASA status of the patient and causes of cancellation, 91 % of anaesthetist related cancellations were in ASA III patients, no ASA IV patient was cancelled because of the anaesthetic reasons. In no-shows and patient refusal group 85 % of patients were ASA I. Only one case (1.8%) was cancelled because of administrative reason in a patient for whom implants were not available for hip replacement.

### Discussion

Despite evaluating patients in the preoperative anaesthesia assessment clinic, postponements of surgery does occur and the causes have been conventionally divided into patient related factors, anaesthetic led cancellations, administrative problems like non-availability of theatre, instruments and operating room personnel or surgeons.<sup>7,8</sup>

Pollard et al<sup>7</sup> studied a similar patient population and showed that the most frequent reasons for cancellations were insufficient operating room time (21%), acute patient illness (19%), surgeons decision (16%), patient refusal (14%) and need for further medical evaluation (13%).

In another study by Dexter et al,<sup>9</sup> reasons for cancellations were; anaesthetist related 13.9%, surgeon's related 6.1% and patient refusals 8.6%.

In our audit patient refusal, no-shows and financial constraints were the most common factors leading to the cancellation of elective surgery. These factors do not

correlate well with the results of the prior studies done in countries where the medical care is largely provided by the state or the patient utilizes health insurance facilities to cover the cost of hospitalization and surgery. The apparent reason of such a high rate of patient's failure to follow surgical appointment in our study seems to be financial limitation, since patient's themselves have to bear the cost of health care. In our institution patients are given the financial estimates of surgery and hospitalization after they are evaluated by the surgeon and the anaesthetist. Many of the patients do not show up for surgery as they 'shop-around' to find a less expensive place. These patients tends to be physically fit as is revealed in our audit that 85% of patients in patient refusals and no-show were ASA I. These 'no-shows' exert a negative impact on our hospital economics and lead to unnecessary utilization of our work force as a considerable time is consumed in contacting patients preoperatively to confirm their willingness to attend the hospital for surgery. In addition these non-attendees may prevent other deserving patients to be put on a surgical list as the surgical slots are not unlimited and many surgeons do have patients on waiting lists. To reduce this significant number of cancellations we suggest that the patients should not be given a surgical slot unless they commit themselves by paying some deposit. This 'buying a surgical slot' approach might filter the patients who genuinely want to utilize our health care facility.

Another possibly avoidable reason for patient related cancellation apparent in our audit was due to non-compliance of patients to preoperative instructions (5.4%). A possible solution could be to give written instructions instead of verbal.<sup>10</sup>

Anaesthesia related cancellations came out to be the second most common reason in this audit (21.8%). The previous reported incidence is 2-14% depending on how the operating room cancellations are defined and whether the study is retrospective or prospective.<sup>2,3,8,11</sup> One explanation of this relatively higher rate of cancellations on medical grounds could be that being a tertiary care referral centre, sicker patients are referred to us often with the poorly controlled systemic diseases. We found most (91%) of the anaesthetist related cancellations were ASA III and all of them were postponed for optimization of medical condition before operation.

Twenty five percent (25%) of anaesthesia related cancellations were made by the anaesthetist responsible for conducting the case in patients who were 'cleared' by the evaluating anaesthetist in the preoperative anaesthesia assessment clinic. This group was considered avoidable as better communication between the evaluating anaesthetist and the anaesthetist responsible for conducting the case might avoid cancellation in these patients.

Cancellations done by surgeons 18.2% were comparable to that reported in the literature.<sup>2</sup> Majority of the surgeons related cancellations (5.45%) in our study were because of the unplanned and over-booking of surgical slots. This again is a cause that is preventable by better organization of the operating room scheduling.

In conclusion the reasons for operating room cancellations and postponements are multifactorial. In our audit most of the cancellations came out to be un-avoidable (patient related factors, most commonly no-shows and financial reasons).

The factors that appear to be avoidable and controllable should be appropriately addressed to reduce the cancellations of surgery in patients attending the preoperative anaesthesia assessment clinic.

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