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Original Research Article

Determinants of Surgical Delay Among Orthopaedic Trauma Patients in a Tertiary Care Centre in North India: A Two-Year Retrospective Study

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Abstract:

Introduction: Traumatic injuries remain one of the leading causes of death worldwide. The delay in operation for any reason leads to increased morbidity, mortality, length of hospital stays, and overall cost. It may also lead to patient dissatisfaction and reflect inefficiency among the operating staff. The purpose of this study is to recognise and, hence, decrease the delay in the surgical management of trauma patients due to organizational reasons.

Material and Methods: The present retrospective observational study was conducted in the Department of Orthopaedics, Bone & Joint Hospital, GMC Jammu, over a period of 02 years, with the aim to assess the magnitude and determinants of the cancellation of elective surgical cases in a tertiary hospital. The data from 1024 patients were collected and analysed.

Results: The mean age of the study subjects was 41±15.5 years. The majority of the study subjects were males (66.4%), mainly belonging to the rural areas (64.9%), and about 57% subjects had either a delay or cancellation of surgery. Lack of operating theatre space was the major contributing factor to this delay (approx. 55.6%), followed by uncontrolled blood pressure.

Conclusion: The present study concluded that the majority of the surgical delays were due to organisational reasons, which are avoidable, and there is room for improvement, and most importantly, the patient care will have a positive outcome.

Keywords: Trauma, Injury, Delay, Health and Treatment.

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Introduction

The concept of patient safety is a new healthcare discipline. Traumatic injuries are one of the leading causes of death in India and in other countries. Despite the advancements in medicine and surgery, mortality and morbidity are the major problems globally [1]. It is observed that trauma is a major cause of mortality and disability worldwide [2]. Surgeries, whether elective or emergency, are scheduled after optimisation and minimal preparation, respectively. The literature suggests that there is limited access to safe, timely and affordable surgical care in a low-resource setting trauma care centre [3]. If there is a delay in operating on trauma patients for any reason, this may lead to increased morbidity, mortality, length of hospital stays and overall cost. It may also lead to patient dissatisfaction and reflect inefficiency among the operating staff. It is reported that there are three main delays in surgical care, i.e. delay in pre-hospital care, delay in transfer of the patient and delay in the definitive treatment/care/surgery [4,5]. Thus, the present study aimed to assess the magnitude and causes of the cancellation of elective surgical cases in a tertiary hospital.

Material and Methods

The present Retrospective Observational Study was conducted in the Department of Orthopedics, Bone & Joint Hospital, GMC Jammu, over a period of 02 years (January 2022 to Jan 2024) after taking the ethical permission from the concerned authority. In the present study, the data of 1024 patients were screened. The patient's age, gender, planned procedure, and reasons for delay or cancellation

were recorded. The collected data were further analysed for the respective determinant involved.

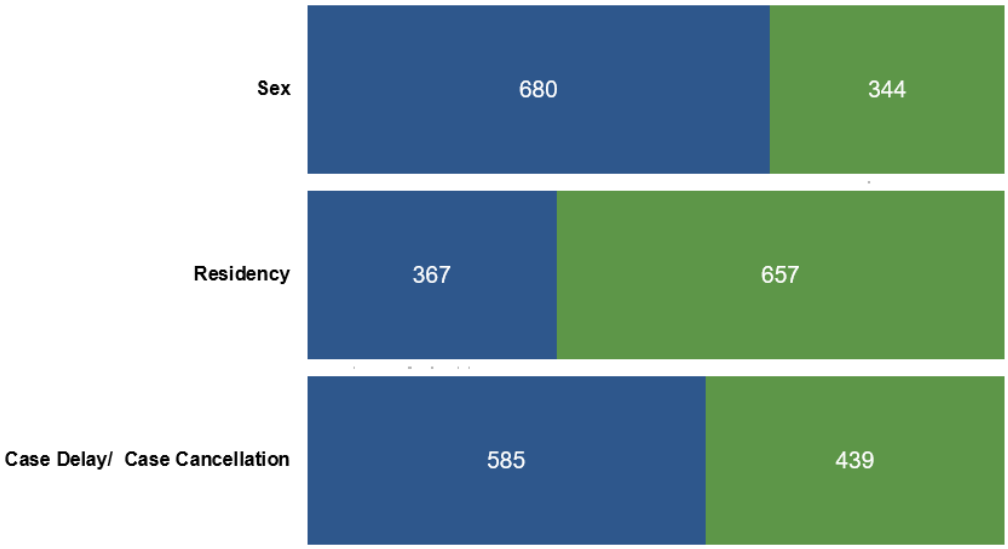
Inclusion Criteria

1. Patients with traumatic injuries who are planned for surgical management.
2. Age greater than 18.

Exclusión Criteria

1. Patients who are planned for elective Orthopaedic procedures.
2. Age below 18 years.

The data was collected from the Medical Records Section, and the causes of cancellation were recorded for the specified time period. The collected study was rechecked for any incomplete content, errors, or discrepancies. Analysis was done using frequency, percentage, mean value and standard deviation and interpreted using the tables.



Observations and Results

Table 1: Demographic Variables

Variables	Characteristics	Percentage (%)	No. (n)
Sex	Male	66.4	680
	Female	33.6	344
Residency	Urban	35.8	367
	Rural	64.9	657
Case Delay Or Case Cancellation	Yes	57.1	585
	No	42.9	439

Table 1 depicts the demographic variables of the study subjects. The mean age of the study subjects was 41 ±15.5 years. The majority of the study subjects were males (66.4%), most of the patients were living in rural areas (64.9%), and 57.1% subjects had either a delay or cancellation of surgery.

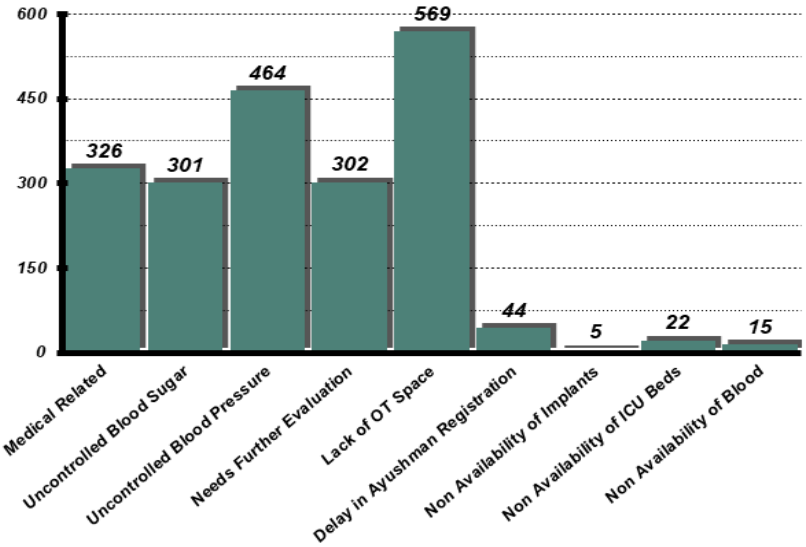
Table 2 : Analysis of Determinants involved

Determinants of Delay or Cancellation	Percentage contribution	Number (n)
Medical Related	31.8	326
Uncontrolled Blood Sugar	29.4	301
Uncontrolled Blood Pressure	45.3	464
Needs Further Evaluation	29.5	302
Lack of OT Space	55.6	569
Delay in Ayushman Registration	4.3	44
Non-Availability of Implants	0.5	5
Non-Availability of ICU Beds	2.1	22
Non-Availability of Blood	1.5	15

It was found that 55.6% of the surgeries were rescheduled at least once due to lack of operation theatre space, 2.1% due to non- availability of ICU beds for C-spine patients, 31.8% due to medical reasons (Co- morbidities, need for interruption of anti-platelet treatment, need for ECHO), optimisation of blood sugar (29.4%) / blood pressure (45.3%), 4.3% due to delay in Ayushman Bharat (AB-PMJAY) registration, 1.5% due to non - availability of blood for transfusion during surgeries, and 0.5% due to non-availability of implants.

Discussion

Cancellation of elective surgeries due to any of the mentioned reasons has a significant bearing on the patient and with many added unwanted consequences. Cancellation of surgery is a burden on resources and a wastage of OT time. It also increases patient waiting and subsequently decreases patient satisfaction and trust. The morale of healthcare professionals is also decreased. It was reported that the mean age of the study subjects was 41 ±15.5 years. The majority of the study subjects were males (67.2%), most of the patients were living in rural areas (64.2%), and 69% of subjects had cancellation of surgery. The findings are correlated with the study conducted by Jagiasi J et al. (2015), which reported that the mean age of the study subjects was 42 years, and a majority of the subjects were males [6]. Another study performed by Ifesanya AO et al. (2013) found that the mean age of the patient was 36.2 ±19.2 years, and most of the patients were males. The male-to- female ratio was 1.3:1[7]. In our study the elective case cancellation rate was 31% and about 55.6% of the surgeries were rescheduled at least once due to lack of operation theatre space, non-availability of ICU beds for C-spine patients, changed priorities for surgeries, 35.4% due to medical reasons (Co-morbidities, need for interruption of anti-platelet treatment need for interruption of anti-platelet treatment need for ECHO, optimisation of blood sugar/blood pressure etc.), 6% due to delay in Ayushman Bharat registration, 1.2% due to non - availability of blood for transfusion during surgeries, 0,8% due to delay in signing of informed consents, 0.6% due to non-availability of implants, 0.4% unknown patients. These findings are consistent with the studies conducted by Zimmerman A et al. (2020), who observed that the common reason for delay was transfer to hospital, followed by diagnosis and lack of resources [8]. In another study carried out by Jagiasi J et al. (2015) found that 48% patients had a delay in surgery, and the most common cause of delay was lack of infrastructure, followed by delay in getting fitness, getting implants and delay in procuring funds [6].



Conclusion

The present study concluded that the majority of the surgical delays were due to organisational reasons, which are avoidable, and there is room for improvement; most importantly, the patient care will have a positive outcome. Thus, the protocol for the preparation of the patient for to-be-done surgeries must be strictly adhered to and ensure that only ready patients are put on the definitive theatre list. Proper pre-operative patient assessment, implants/equipment and availability of blood must be made before the patient is shifted to the operating room. Documentation regarding cancellation/delay must be done, and the reason must be explicitly written and explained to the patient/attendants.

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