WAITING TIME FOR EMERGENCY SURGERIES IN A TERTIARY CARE PUBLIC HOSPITAL – A PERFORMANCE AUDIT

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ABSTRACT

Objective: To find out the waiting time for emergency surgeries and to identify causes responsible for this delay in a tertiary care public hospital.

Settings: Surgical Unit IV, Civil Hospital, Karachi.

Patients and Methods: Patients admitted through emergency for immediate emergency operations during the month of November and December, 2003 were included in the study. For data collection a proforma was made which included diagnosis, operation performed, time of planning immediate surgery, time of surgery, causes responsible for delay apart from demographic information.

Main outcome measures: Waiting time for emergency surgeries, different causes responsible for the delay.

Results: A total of 45 patients were enrolled in the audit study. Majority of patients 14 (31.1%) were suffering from acute appendicitis. 33 (73.3%) of patients had to wait for more than 3 hours before their emergency surgery. Major cause of this delay in 33.6% of patients was due to surgical team doctor's inefficiency. In 7 (21.2%) patients surgery was delayed due to late night admission and in 6 (18.1%) due to non-availability of cross matched blood. In 5 (15.1%) patients surgery was delayed due to unavoidable causes like busy theatre and arrival of more serious patients.

Conclusion: A substantial number of patients needing emergency surgery waited too long for the surgical management. Majority of delays were due to causes which can be addressed to improve the patients care.

KEYWORDS: Emergency surgery, waiting time, causes, delay

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INTRODUCTION

Hospital admission for emergency surgery can be a traumatic experience for anybody. The emotional and psychological trauma can increase significantly if surgery is unduly delayed.

All cases of surgical emergency with firm diagnosis needing surgical intervention as a part of management should be operated as early as possible to minimize the risks associated and decrease the post operative morbidity. In practice the timing of management is influenced by many factors like clinical diagnosis, complications at the time of presentation, consequences of delay, work load of surgeons and the time of hospital admission (day / night).

Keeping this in view a small audit was planned to see waiting time for emergency surgeries and to look into different causes responsible for the delay so that necessary intervention can be planned to improve quality of patient care.

PATIENTS AND METHODS

All patients admitted during emergency for either immediate surgery or at the earliest possible time (maximum three hours after diagnosis / admission) were enrolled in the study. Patients who did not require immediate surgical management, those who were admitted for observation and patients who needed prolonged initial resuscitation due to disease process or co-morbidity were excluded from the study.

There was no formal guideline for acceptable waiting time for emergency surgery in our unit. After consensus within the surgical team of the unit which included Professor, Associate, Assistant Professor and Senior Registrar local guidelines were prepared. As per this guideline, time taken for preparing patient for surgery which includes detailed history taking, proper clinical examination, essential investigations and to carry preoperative orders should not be more than three hours.

All patients admitted during the month of November and December, 2003 who fulfilled inclusion criteria were included in the study. Time measured was after Chief RMO admitted the patient for emergency surgery to the start of surgery. However one limitation of our study is that the time spent by the patient in the Emergency department before a decision was taken to operate was not taken into consideration. Different causes responsible for delay of more than three hours were observed.

Table-I: Disease pattern of emergency admissions

Disease	*Number*	*Percentage*
Acute Appendicitis	14	31.1
Abscess	7	15.5
Obstructed Hernia	5	11.1
Intestinal Obstruction	5	11.1
Intestinal Perforation	4	8.8
Gun shot injury	3	6.6
Blunt Chest trauma	3	6.6
Blunt Abdominal Trauma	2	4.4
Stab wound	2	4.4
Total	45	100.0

RESULTS

Total 54 patients were admitted through casualty during the study period. Forty five patients who fulfilled the inclusion criteria were enrolled in the study. Majority of patients 14 (31.1%) were suffering from acute appendicitis. Diagnosis of all patients are shown in Table-I. Twelve (26.6%) patients were operated within three hours of admission while majority of patients 33(73.3%) waited for more than that. Waiting time of all patients is shown in Table-II. Majority of the surgical procedures 12(36.3%) were delayed due to doctors inefficiency. In 7(21.2%) patients, surgery was delayed due to late night admission, while in 6 (18.1%) patients the delay was due to non-availability of their cross-matched blood. In 5(15.1%) patients the delay was due to unavoidable circumstances like more urgent surgery such as gunshot or stab wound needing emergency exploration. (Table-III)

DISCUSSION

According to H B Devlin 'surgery without audit is like playing cricket without keeping the score'.[1] Clinical audit is defined as "a quality improvement process that seeks to improve patient care and outcomes through systematic review of care against explicit criteria and the implementation of change".[2] Where indicated,

Table-II: Waiting time for emergency surgeries

Time	*Number*	*Percentage*
3 hours	12	26.6
4 hours	8	17.7
6 hours	15	33.3
12 hours	7	15.5
> 12 hours	3	6.6
Total	45	100

Table-III: Causes of increase in the waiting time (> 3 hours) for Emergency Surgeries

Cause	*Number*	*Percentage*
Doctors of surgical team	12	36.3
Timing of admission	7	21.2
Blood availability	6	18.1
Anesthetists availability	5	15.1
OT Staff	4	12.1
Investigations	4	12.1
Attendants	2	6.0
Unavoidable	5	15.1

* In some patients the increase in waiting time was due to multiple reasons

changes are implemented at an individual, team, or service level and further monitoring is used to confirm improvement in healthcare delivery. Its purpose is to achieve best quality clinical care.[3] A recent report has recommended mandatory departmental audit in all institutions which will not only generate lot of useful local data but also improve patient care.[4] Departmental audit by Bilal A et al.[5] is indeed a pioneering effort in Pakistan.

The General Medical Council (GMC) also advises doctors that they 'must take part in regular and systematic medical and clinical audit... where necessary, they must respond to the results of audit to improve their practice'[6] The whole team of surgical unit IV, Civil Hospital Karachi took the initiative to do these activities on regular basis. The aim was a small project that delivers modest improvement in patient care preferable to a larger, more ambitious venture that runs into difficulties and fails to achieve improvement. Different areas were discussed but emergency care that needed the most attention was taken up first.

One study from Canada demonstrated worse outcomes for patients who had to wait for coronary artery bypass grafts.[7] Brittenden J. et al.[8] showed that longer delays in emergency surgery for femoral hernia were associated with an increased morbidity and mortality. A study to observe relationship between treatment delay and outcome of small bowel perforation after blunt abdominal trauma showed that small bowel perforation has low mortality and complication rates if it is treated earlier than 24 hours after injury.[9]

Twenty five percent of general surgical admission present primarily with acute abdomen and thus represent a significant proportion of a surgeon's workload.[10] A recent study of pattern of diseases in surgical ward at civil hospital Karachi showed that majority of cases of acute abdomen were due to acute appendicits.[11] In this study also 31.1% of admission were diagnosed as acute appendicitis. (Table-I)

Only 26.6% of patient in our study were operated within the duration of three hours from their admission while 73.3% of patients waited for more than 3 hours for their surgical treatment. A study from Libreville hospital centre showed that 54.2% patients had some delays in the management of surgical emergencies.[12] In our study majority of patients 23 (51.1%) were operated between 4 to 6 hours. (Table-II).

Some surgical conditions are such that a delay could mean either loss of life, disability (permanent or temporary) or loss of function (permanent or temporary). Strangulated obstruction carries a mortality of 10-37%, whereas simple obstruction carries a mortality of less than 5%.[13-15] Early recognition and immediate operative treatment of strangulation obstruction are the only current means of decreasing this mortality. In our study two patients who presented with simple obstruction needed resection and anastomosis of gut because of gangrenous changes due to delay in surgery after admission. Another patient of acute appendicitis needed laparotomy for generalized peritonitis due to delayed surgery.

While observing different causes most of the delays (36.3%) were due to doctors of the surgical team, which include house surgeons and Resident Medical Officers (RMO). Doctors are the major contributors towards providing a good quality health service, but complacency can creep in doctors as well. Delay was due to incomplete file work, not carrying out all preoperative orders which includes giving timely

call to anaesthesia department. No surgery (except some gunshot injuries) was performed without proper file work. It is recommended that 'Write all notes as if they may be used one day as evidence of professional competence in a court of law. In the eyes of law, if it is not written down, it never happened.'[16]

Admission during the night appeared to be the second common cause of delay in surgery in 21.1% of patients. Most of the patients in this group included cases of acute appendicitis. With appropriate use of intravenous fluids and parental antibiotics, a policy of deferring appendicectomy after midnight to first case of the following morning does not increase morbidity.[17] A study showed that in children with acute appendicitis, delaying surgery until the daytime hours did not significantly affect operating time, perforation rate or complications. Delayed management allows greater efficiency and effective use of physician and hospital resources, including decreased resident involvement in operations during the night.[18] Surgery in some patients was delayed due to non-availability of compatible blood from the Blood Bank located within the hospital premises.

A team works best if everyone knows what is happening and what is expected of them. In 5 (15.1%) patients surgery was delayed due to unwillingness of anaesthesia personnel on flimsy grounds. Four (12.1%) surgeries were delayed due to uncooperative attitude of OT technician the main reason being little time left in their duty hours. In 4 (12.1%) patients delay was due to waiting for complementary medical test results. Surgery in three patients got delayed due to attendants who were not willing to accept surgical management of the patient. In their opinion patients condition would improve with conservative treatment. One of them left against medical advice, and was not included in the study. Another study showed that the most common cause of delay has been the waiting of complementary medical tests results (44.4%), followed by difficulties in supplying (31.1%) and by technical or staff problems (24.1%).[12]

Some delay was also observed due to unavoidable causes like busy theatre, arrival of firearm or stab wound which needed more urgent surgical exploration as compared to less urgent surgery like appendicectomy. In another study these causes account for delayed surgery in 14% of patients.[19]

Recommendations: On the basis of the study findings following recommendations were made:

- The emergency incharge (Chief RMO) should make a 24 hour duty roster for RMO and house surgeons on the emergency day for the casualty.
- All RMO's and House Surgeons should be in the casualty department for their respective duty and don't wait for call from the casualty.
- After deciding that the patient need immediate surgery, efforts should be made that all file work which include history, clinical examination is completed in the casualty.
- All relevant urgent investigations should be requested from the casualty.
- Anaesthesia department and Emergency Operation theatre should be informed immediately when a decision is made for surgery.
- Pre operative orders should be carried out while taking history and requesting investigations.
- As soon as the patient is prepared for surgery, call should be given to anaesthesia department to send anaesthetist to Emergency OT.
- All doctors should be encouraged to do their job efficiently and the House Surgeons and RMO responsible for a particular patient should be given first chance to scrub for surgery.

CONCLUSION

The findings of this audit suggest that there is a wide area with lack of professional attitude by the concerned healthcare person-

nel in delivering the best possible care to the patients.

A significant proportion of patients waited too long to get operated. Most delays were not due to lack of skill and ability or facility in the institution. The only thing which lacked was true professionalism, realization of one's duties, proper communication and teamwork. A follow-up audit after implementing these recommendations is planned to see if it makes any significant difference in reducing the waiting time for emergency surgeries.

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