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AN AUDIT FOR SURGICAL SAFETY CHECKLIST COMPLIANCE IN OPERATION THEATRES IN A TERTIARY CARE HOSPITAL IN WESTERN INDIA

General Surgery

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ABSTRACT

Background: Healthcare is undergoing transformations and is being revolutionized by ground breaking developments at rapid pace .At the same time the complexities lead to increased risk of unsafe care ,and patient harm .In view of patient risk the World Health Assembly (WHA) established the WHO Patient Safety international partnership in 2004 followed by issuing Global Patient Safety Challenges, to pool world resources and formulate clinical guidelines and tools for patient safety In January 2007, the second Global Patient Safety Challenge, called Safe Surgery Saves Lives was issued and the surgical safety checklist was compiled for use all over the world. The checklist has been in use and as a part of quality improvement **Objective:** To assess World Health Organization (WHO) Surgical Safety Checklist (SSC), compliance and compare between different OT s in a multispecialty hospital. **Methods:** A trained team of nurses were placed as auditors in the 6 different OT complexes of the hospital . They were given an audit sheet to prospectively observe on ground compliance to the surgical safety checklist over a period from 1 October 2022 to 30 Nov 2022 . The findings were collated for comparison and for further action for improvement. **Results:** There was 100 percent compliance in using of SSC in all OTs. Out of 6 OTs 3 OTs where major surgeries took place were found 100 percent compliant. In the other OTs majority of compliance was excellent but few areas showed suboptimal results in areas of imaging display, blood products ordering estimated blood loss and equipment checks documentation. The audit highlighted the need for training and awareness in the suboptimal areas and strengthening areas of surgical safety. **Conclusion:** WHO SSC is an effective tool in ensuring safe surgery and to prevent adverse events. Comparative analysis of different OT complexes helps to identify areas for improvement Regular audit, training and awareness sessions safe surgery and surgical safety checklist are important to continue the safety measures and improve and update regularly

KEYWORDS

Safe surgery, surgical safety checklist.

INTRODUCTION

Surgical interventions represent approximately 30% of the global burden of disease[1]. (1)Surgery is specialized field of intervention undergoing rapid transformation in the past decade with introduction of robotics. Nonetheless surgery has its share of patient risk and associated morbidity and mortality including unsafe surgical practices, errors, and adverse events. A retrospective study from Italy from five major hospitalson adverse events found the median overall incidence of in-hospital adverse events as 9.2%, with a median percentage of preventability of 43.5%. (2)The same study found that surgical branch was second most common specialty to have adverse events (30.1%). (2)

Lancet commission on global surgery has predicted increased incidence of surgical procedures to as high as 5000 per 1,00,000 population by 2030. (1) It is therefore essential that stringent check mechanism and strict adherence to standard operating procedures are followed so that adverse events are curtailed.

The WHO surgical safety checklist was developed after extensive consultation aiming to decrease errors and adverse events and to increase teamwork and communication in surgery (3). The checklist developed by WHO in 2008 as part of its "safe surgery saves lives "-the second global patient safety challenge, initiative (4). The implementation manual was published in April 2009 with encouragement to adapt to local settings. It consists of 19 items and is used at three critical timelines in surgery:

1. Before induction,
2. Before incision and
3. Before the patient leaves the operating theatre

The literature studies on the surgical safety checklist showed mean compliance rate- 90.2% and mean completion rate- 61% , respectively. (5-6).The Implementation of this comprehensive checklist was associated with a reduction in surgical complications and mortality in hospitals with a high standard of care (7).

The present study was undertaken as a part of audit aiming at quality improvement in a tertiary care hospital in western India.

MATERIAL & METHODS

The aim of this study was to assess the compliance of WHO safe surgical checklist in different operation theatre complexes in the hospitaland to suggest measures for improvement.The study was performed in the sevendifferent OT complexes of the hospital for 2 months, from October 2022to Nov 2022. A total of 115 patients who underwent surgical procedurein different OT complexes were included in the study. The WHO surgical safety checklist use was audited by trained team of quality team auditors to verify ground compliance. A special team of nurses was trained by Quality team on the auditing procedure and on the use of checklist. They were assigned to different OT complexes to audit compliance on ground during the process. The results were collected and analyzed for compliance and the areas of suboptimal performance were noted. Descriptive statistics was used using on line free statistical software (MedCalc version 20.215)

RESULTS

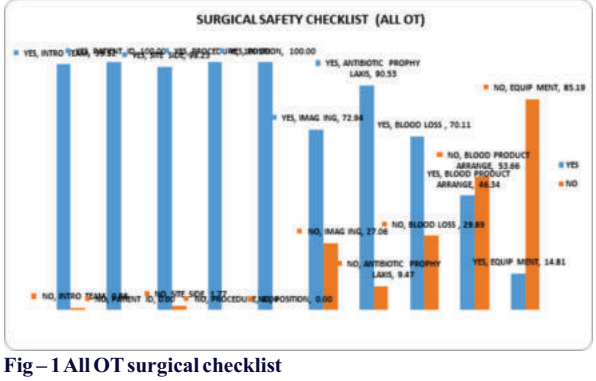

Fig – 1 All OT surgical checklist

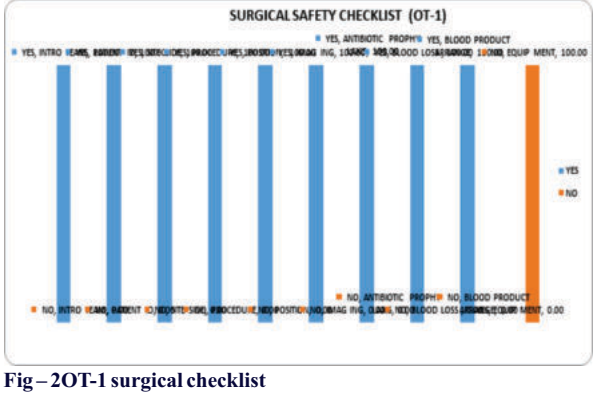

Fig – 2OT-1 surgical checklist

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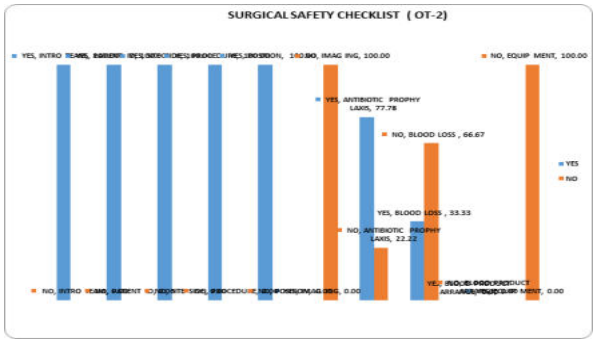

Fig – 3 OT-2 surgical checklist

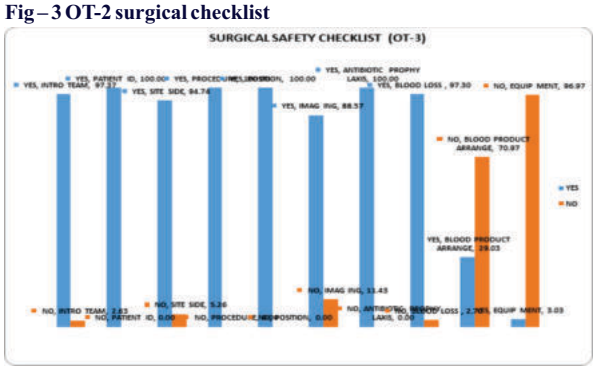

Fig4 –OT-3 surgical checklist

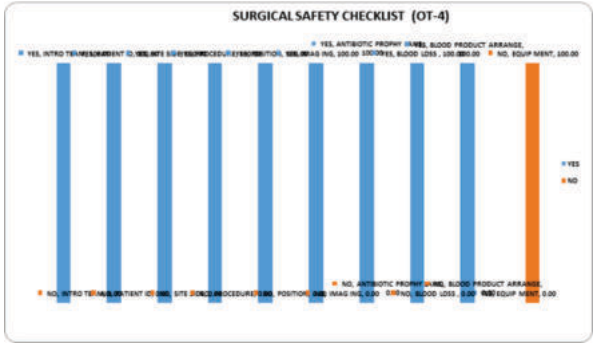

Fig – 5OT-4 surgical checklist

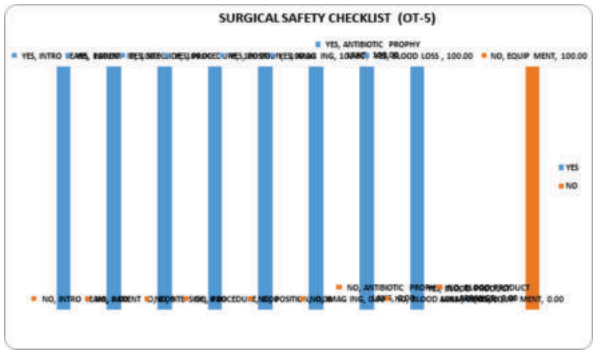

Fig – 6-OT-5 surgical checklist

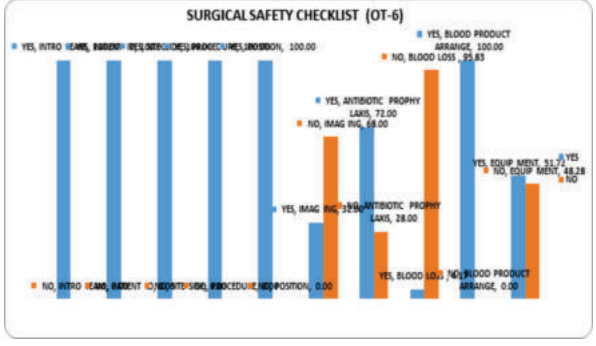

Fig –7 -OT -6 surgical checklist

There was excellent 100 % compliance in patient ID verification,and verification of position and procedure. The compliance was also excellent in introduction of team 99.12 % and verification of site and side 98.23 %. Antibiotic prophylaxis was excellent with 90.5 % compliance overall. (Fig-1)

Imaging display for surgery was suboptimal 72.9 %and so was for blood loss documentation 70.1 %. Equipment check was not documented in 14.8%. Blood product arrangement compliance was suboptimal 46.34 %.

Comparative analysis of different OT complexes (OT-1, 4 & 5) showed 100 %compliance in OT-2 that dealt with cardiac cases. (Fig -2, 5, 6) OT-3 was partially compliant in areas of use of essential imaging - 88 % and blood products arrangement 29.03 % compliance.OT-2 had partial compliance in antibiotic prophylaxis – 77% and no imaging display and partial documentation of estimated blood loss 33.33%.(Fig- 3)

OT-6 audit revealed good compliance except in imaging display – 32 % and antibiotic prophylaxis documented in 72 % Blood loss documentation was only 4.17 % and equipment check documentation
On review of audit findings there was good compliance except certain OT complexes where more training and awarenesswas needed. Also departmental policies regarding blood products and antibiotic prophylaxis needed attention.

DISCUSSION

Safe surgery is a priority with the burgeoning rise of surgeries all over the world as healthcare is more accessible to different corners of the world. The use of surgical safety checklist has been encouraged by WHO to prevent unsafe surgery and minimize adverse effect on patient health. The current study was a prospective audit performed using surgical safety checklist in the different OT complexes of the tertiary care hospital. There was variation in certain aspects of checklist compliance which highlighted the need for more awareness and training followed by repeat audits.

Out of 6 OT there was 100 percent compliance in the 3 major surgical OT s. The other OT has suboptimal compliance in certain areas of blood products arrangement, imaging display, antibiotic prophylaxis and bloodloss estimate documentation. The site and side identification was done correctly in all cases and no major adverse events have been reported. The mean compliance rate to surgical checklist was 90.2% (0, 100). The mean completion rate was 61% (0, 84) (5).A retrospective study revealed that the use of the WHO checklist could have prevented 14.9% of all wrong-side errors such as marking the wrong side (8).It has been suggested that the use of the WHO Checklist is associated with the development of a better safety attitude among the operating personnel (9).

Surgical morbidity and mortality are rightly considered public health concerns (10). It has been estimated that more than 200 hundred million major surgical procedures are performed annually worldwide (11). Overall, the incidence of in-hospital adverse events is about 10 per cent, of which three-quarters are related to surgery. At least half of these adverse events are considered preventable within the current standards of care (12).

Substantial improvements can be achieved by reducing variation in the reliability of surgical care processes with use of Safe surgery checklist which is in line with international safety measures.

The overall compliance was satisfactory however areas like use of blood products, antibiotic prophylaxis needs improvement in terms of documentation. There wasn't any sentinel event reported.

CONCLUSION

WHO Safe surgery checklist is an effective tool in ensuring safe surgery and to prevent adverse events. Comparative analysis of different OT complexes helps to identify areas for improvement, regular audit, training and awareness sessions are important in safe surgery measures including Safe surgery checklist.

Conflict of Interest- Nil
Sources of funding – Nil

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