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Surgical safety in catheterization laboratory

Segurança cirúrgica em laboratório de cateterismo

Seguridad quirúrgica en laboratorio de cateterismo

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ABSTRACT

Objective: To describe the process of implanting the surgical safety checklist in a catheterization laboratory (CL).
Method: Descriptive case report study about the safety strategies developed in the last six years in a university hospital in the southern region of Brazil.
Results: The six international patient safety goals (IPSG) were incorporated into the care practice in accordance with the hospital's Joint Comission International (JCI) accreditation program, through a continuous process of educational nature. The checklist was adapted considering the characteristics of the unit and the procedures performed.
Conclusion: The implementation of the checklist provided the promotion of patient safety, greater staff integration, advances in communication among professionals and
the recording of in-room care information.
Keywords: Patient safety. Checklist. Hospital accreditation.

RESUMO

Objetivo: Descrever o processo de implantação da lista de verificação de segurança cirúrgica em laboratório de cateterismo (LC).
Método: Estudo descritivo do tipo relato de experiência das estratégias de segurança desenvolvidas nos últimos seis anos em hospital universitário da região Sul do Brasil.
Resultados: Foram incorporadas na prática assistencial as seis metas internacionais de segurança do paciente (MISP) em consonância com o programa de acreditação hospitalar pela Joint Comission International (JCI), por meio de um processo contínuo com caráter educativo. A lista de verificação foi adaptada considerando as características da unidade e os procedimentos realizados.
Conclusões: A implantação da lista de verificação proporcionou a promoção da segurança do paciente, maior integração da equipe, avanços na comunicação entre os profissionais e no registro das informações da assistência em sala.
Palavras-chave: Segurança do paciente. Lista de checagem. Acreditação hospitalar.

RESUMEN

Objetivo: Describir el proceso de implantación de la lista de verificación de seguridad quirúrgica en un laboratorio de cateterismo (LC).
Método: Estudio descriptivo del tipo relato de experiencia sobre las estrategias de seguridad desarrolladas en los últimos seis años en un hospital universitario de la región Sur de Brasil.
Resultados: Se incorporaron en la práctica asistencial las seis metas internacionales de seguridad del paciente (MISP) en consonancia con el programa de acreditación hospitalaria por la Joint Comission International (JCI), a través de un proceso continuo con carácter educativo. La lista de verificación fue adaptada considerando las características de la unidad y los procedimientos realizados.
Conclusión: La implantación de la lista de verificación proporcionó la promoción de la seguridad del paciente, una mayor integración del equipo, avances en la comunicación entre los profesionales y en el registro de las informaciones de la asistencia en sala.
Palabras clave: Seguridad del paciente. Lista de verificación. Acreditación de hospitales.

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INTRODUCTION

Patient safety is one of the six dimensions of quality in health care. It therefore assumed that it must be performed with safety, effectiveness, patient centrality, opportunity, efficiency and equity[1]. The safety dimension in health care is defined as a set of actions aimed at protecting the patient against risks, adverse events and unnecessary damages, which affect from 4 to 17% of the individuals during the care provided in the health services[2].

In the last decades, many institutions have sought consolidated standards of quality to promote improvements and actions that ensure patient safety in the provision of care. In this context, the *Joint Commission International* (JCI) [3-4] is the leading global certification on the safety and quality of health services. Currently, there are 1,044 accredited organizations in the world, of which 36 are Brazilian[4].

The JCI hospital accreditation process incorporates international quality standards,

including the implementation of the six international patient safety goals (IPSG): 1 - To identify patients correctly, 2 - To improve communication effectiveness, 3 - To improve the safety of high vigilance drugs, 4 - To ensure Safe Surgery, 5 - To reduce the risk of healthcare-associated infections and 6 - To reduce the risk of injury to patients resulting from falls[3].

In reference to Goal 4 - To ensure safe surgery, the measures adopted aim to ensure correct patient, location, laterality and procedures, in order to prevent adverse events and damages that may occur before, during and after the anesthetic-surgical procedure. To avoid failures during these procedures, a checklist (safe surgery checklist) is used in the operating room[2], which aims to reinforce safety practices by promoting communication and work among the health team[5].

The checklist is divided into three phases, entitled: **Sign in -** it should be performed in the operating room, anesthesia/sedation, immediately before the beginning of the anesthetic procedure; **Time out -** incision or beginning of the procedure, with nursing, anesthetist and surgeon; **Sign out -** before the patient leaves the operating room or procedure[6-7]. At each stage, the person in charge of the check should confirm that the team has completed its tasks before proceeding to the next step, and if any item checked is not in compliance, the verification should be interrupted and the patient kept in the operating room until its solution[8].

The checklist implementation process is a relatively simple and a promising strategy to address the safety of surgical patients[9]. These actions incorporate the recommendations of the World Health Organization (WHO), in the second global challenge for patient safety "Safe Surgeries Save Lives". A successful implementation will be feasible if the principles of simplicity, wide applicability, and measurement capability are followed for the surgical verification[5].

Although the available evidence is not conclusive, it suggests that the checklists, when effectively implemented, have the potential to be effective in reducing complications and mortality rates after surgery[10-11]. This list should be understood as an instrument to improve the interdisciplinary communication, teamwork and safety culture, not just as items to be checked[11].

The catheterization laboratory (CL) is a service of high complexity, in which different medical specialties operate in diagnostic and therapeutic procedures, with a minimally invasive percutaneous and surgical approach, under local and general anesthesia and/or sedation. The nursing team works in all stages of care, from the preparation of the patient to the procedure, the accomplishment and recovery after the procedure[12]. The nurse performs specific actions that involve the management of human and material resources, care activities and implementation of processes related to quality and safety.

In view of the above, considering the care characteristics of the interventionist scenario, this manuscript aims to describe the process of implantation of the surgical safety checklist in CL.

METHOD

This is a descriptive, experience-based study that addresses the quality and safety strategies incorporated in the last six years to the CL care practices of a large teaching hospital in the southern region of Brazil.

The Hospital of Clinics of Porto Alegre (HCPA) seeks to adopt models for improving the quality of care management. The Patient Safety Nucleus, composed of the Quality Management and Health Information Program (Qualis) and the Permanent Committee of the Hospital Sanitary Risk Management (Risk Management), has a direct role in these aspects, having as main job to implement and manage quality and safety actions in the institution.

In 2013, the HCPA succeeded with the Hospital Accreditation by JCI, as the first medical-academic center among Brazilian teaching hospitals, being re-accredited in 2017. This process required the creation of working groups, with representatives of the different areas of the hospital, under the coordination of Qualis, to act as facilitators in the dissemination of measures aimed at improving the care practice.

For surgical units or with invasive procedures, the "Goal 4 Group and the Anesthesia and Safe Surgery chapter"[3], composed by nurses, anesthetists, surgeons and administrators, responsible for the Safe Surgery program, carried out a study in the literature and long-term discussions for the construction of the checklist, based on already used models. After the necessary adaptations to each unit, respecting the minimum items recommended by the WHO[6], the checklist was applied in those areas.

The CL, one of the areas in which the checklist was implemented, presents three procedure rooms, where the neurology, interventional radiology, electrophysiology, interventional cardiology, vascular and cardiac surgery teams work weekly. In addition, one of the rooms has a permanent anesthetic team and the others only when necessary. The nursing works integrated to the medical teams in all the procedures, with a nurse, a circulating nursing technician and a scrub nurse.

RESULTS AND DISCUSSION

In order to attend quality and safety processes according to the JCI, concomitantly, different strategies related to patient safety were implemented in the CL through multidisciplinary work, nurse facilitator of the CL and actions coordinated by Qualis. In order to ensure uniformity in the clinical practice, documents were developed in policy and plan format, describing the process at institutional level and in standard operating procedure format, with specifications for all the areas and units, with free access to the internal community of the HCPA.

Each unit, according to its service profile, works the six IPSG, in line with the institutional standards. In this sense, in CL were adopted actions involving direct and indirect care to the patient, resulting in improvements in the identification, communication, safety of special drugs, actions to reduce the risk of infection and damages resulting from falls.

In order to meet the Goal 4 criteria, it was adopted the application of the checklist, called Safe Surgery Checklist, in all diagnostic and therapeutic procedures. The room procedure note contains the patient identification data, description, material/drug consumption, the description of the laterality of the procedure (when applicable) and a space to register the accomplishment of the checklist.

The implementation of the checklist occurred in 2012 in the CL, in line with other areas, when the institution was in preparation for evaluation by the JCI. A total of 13 units of the HCPA apply the checklist, following the precept of ensuring intervention in the correct patient, correct procedure and correct location.

As a matter of routine, from the moment these strategies were instituted, with extensive training of the multiprofessional team, the checklist became mandatory in the CL, being checked each item at the entrance of the patient in the room, before the puncture/surgical incision in the presence of all the staff and before the patient leaves the room. Currently, this checking procedure is performed by the nursing team, for being present in all the stages.

The checklist was adapted considering the characteristics of the unit and the procedures performed, and it is already in its second version since its implementation (Figure 1). A study by European researchers evaluated the use of the WHO checklist in 20 CL procedures and verified that the tool was unsatisfactory, it was performed/documented: at the sign in 30%/40%, at the time out 10%/15%, and at the sign out 10%/15% of the time. In addition, two incidents of almost failure were identified, so a modified checklist was implemented for the specific challenges faced in the CL and, after training with the team, a new audit performed in 34 cases showed improvement in all sections in the performed/documented item (at the sign in: 91.2%/82.4%, at the time out: 85.3%/76.5%, and at the sign out: 73.5%/64.7%), with no safety incident[13]. These data reinforce that specific areas should fit the instrument into their own context.

The CL has evolved significantly in recent years, with procedures to treat in addition to coronary diseases, other conditions. Therefore, the checklist should address safety issues for different medical specialties involved in the patient care and when under general anesthesia.

The checklist application/documentation is an indicator of quality of care in the HCPA LC (the numerator is equal to the number of checklists applied and the denominator to the number of procedures by specialty). Its application rate reaches the institutional goal above 90%. The engagement of medical specialties in the process of applying the checklist needs to be advanced in order to be carried out spontaneously and integrated with the nursing team.

Its use makes it possible to perform other process monitoring in the CL service, therefore, it was associated with a decrease in radiation exposure, fewer complications, more rapid changes in patients in the room, and a more positive response in the climate questionnaire answered by the team[14]. The checking focused on the needs of each area/procedure and the interaction between the teams generate better results.

Date: ___/___/___ Procedure: _____ Team: _____

SIGN IN

Before the anesthesia or the preparation in the room

☐ Patient's identification
☐ Scheduled procedure
☐ Procedure FICT
☐ Anesthetic FICT ☐ Not applicable

Allergy History
☐ No
☐ Yes ☐ Patient's bracelet ☐ Kit
☐ Pulse oximeter installed on the patient

Confirm with the medical team
Difficult air way/aspiration risk
☐ Yes
☐ Not applicable

Risk of blood loss > 500ml (7ml/kg in children)
☐ Yes
☐ Not applicable

Hemoderivatives available of the CL
☐ Yes
☐ Not applicable

Confirm with the nursing team:
☐ Available material according to scheduled procedure, sterilized with results of indicators included

Confirm with the medical team
☐ Critical or out of routine step
☐ Not applicable

Responsible professional:

_____

TIME OUT

Before the puncture all the professionals confirm their names and professions

Surgeon, anesthesiologist and nursing confirm verbally
☐ If all team members know each other
☐ Patient identification
☐ Scheduled procedure

Antimicrobial prophylaxis
☐ Yes
☐ Not applicable

Surgical time out time:

Responsible professional:

_____

SIGN OUT

Before the patient leaves the room with surgeon, anesthesiologist and nursing

☐ Confirm patient identification with bracelet

Has the proposed procedure been carried out
☐ Yes
☐ No, which _____

Do equipment have any problems
☐ Yes
☐ Yes, which _____
Referral: _____

Is the surgical instrument count, compresses, gauzes correct
☐ Yes
☐ Not applicable

The surgical/material equipment is:
☐ Correctly identified with specific anatomo-pathological labels
☐ Request and material specification check
☐ Not applicable
☐ Referred by the medical team

Patient's destination:
☐ OR
☐ Other: _____

Responsible professional:

_____

Patient:
Registtration number:

SAFE SURGERY CHECKLIST
CATHETERIZATION
LABORATORY

Figure 1 - Items present at the CL safe surgery checklist

Source: *Checklist* CL HCPA Safe Surgery, 2018.
*FICT (Free and Informed Consent Term); Kit (pre-medication for patients with known allergic reaction); OR (Observation room).

FINAL CONSIDERATIONS

By implementing the patient safety goals and the recommended checklist in Goal 4, it was observed an optimization in the communication between the professionals about the care processes and register of information regarding the accomplishment of the procedure, which began to integrate the data of the patient's chart.

The safety strategies adopted can serve as an example for other institutions, as well as the developed checklist model. The implantation occurred in a hospital in the process of hospital accreditation, used to the incorporation of safety measures, which may require other actions for implementation in institutions in which this culture is still in development.

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