

Implementation of the World Health Organization Surgical Safety Checklist in Plastic and Reconstructive Patients

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ABSTRACT

Background: A considerable amount of damage, both physical and financial, is likely to be prevented by using a safety surgical checklist. Based on World Health Organisation (WHO) guidelines, the Surgical Safety Checklist (SSC) was designed. The aim of this study was to analyze one year surgical safety checklist use in our plastic and reconstructive patients.

Methods: It was a descriptive cross-sectional study. 1684 patients undergoing both plastic and reconstructive surgeries under general or local anesthesia were reviewed. The surgical safety checklist implementation was compulsory for all team members. The data were analyzed all together and separated by “surgeries under local anaesthesia” (SULA) and “surgeries under general anaesthesia” (SUGA). Statistical differences between “team members items implementation” and “Global implementation results compared with their objectives” were analyzed by a Chi-square test (95% confidence interval). The 3 following objectives were proposed: >90% of operations with checklist done, >90% of checklists with all the items done and >90% of checklists with at least 2 signatures presented.

Results: Implementation of checklist items was higher for SULA when comparing with SUGA (94.87% vs 83.63%). Comparing team members items implementation percentages, the following order from higher to lower implementation was detected: nurse (94.66%±2.71%), overall team (88.29%±3.02%), surgeon (78.30%±3.42%) and anaesthetist (72.27±5.84%). The two first objectives were achieved but not the third due to surgeons and anaesthetists, but not the nurses. **Conclusion:** Surgical safety checklist implementation in plastic and reconstructive patients involves a new philosophy of organization that is easier to achieve in health workers with lower hierarchy, represented in our study by nurses and surgeon residents.

A considerable amount of damage is likely to be prevented by using a safety surgical checklist.¹ This prompted the World Health Organization to identify multiple recommended practices to ensure the safety of surgical patients worldwide. Based on these guidelines, the

Surgical Safety Checklist was designed.² The implementation of a Surgical Safety Checklist has not been studied in plastic and reconstructive surgery patients.

The authors conducted a descriptive cross-sectional review of patients undergoing plastic or reconstructive surgical procedures under general anesthesia and local anesthesia at Reina Sofia Hospital (January to December of 2010; *n* = 1684 patients; 719 operations under general anesthesia and 965 operations under local anesthesia). Accurate use of the 19-item checklist proposed by the World Health Organization for operations under general

anesthesia² plus the three signatures of the surgeon, anesthesiologist, and nurse were audited. We elaborated a safety local surgical 10-item checklist plus the two signatures corresponding to the surgeon and the nurse. This 10-item checklist shares eight items with the 19-item checklist for operations performed under general anesthesia and two new items represented as L1 and L2 (Tables 1 through 3).

The checklist (Table 1) was distributed in the following manner: surgeons were exclusively responsible for eight items (surgeon's signature and items 2, 5, 7, 10, 13, 14, and L2). Anesthetists were exclusively responsible for four

Table 1. Surgical Safety Checklist Item Implementation and Results

Items	Items Explanation	Operations Performed under General Anesthesia (%)	Operations Performed under Local Anesthesia (%)	Total (%)
S1	Surgeon's signature	84.46	74.23	79.35
S2	Anesthetist's signature	72.28	—	72.28
S3	Nurse's signature	100	98.78	99.39
L1	Nurse verbally confirms local anesthesia and necessary instrument	—	95.39	95.39
L2	Is the patient taking any anticoagulants or antiaggregants?	—	95.36	95.36
1	Patient has confirmed identity, site, procedure and consent	96.58	98.78	97.58
2	Site marked/not applicable	88.80	95.39	92.10
3	Anesthesia safety checklist completed if applicable	82.55	—	82.55
4	Pulse oximeter on patient and functioning (under local: if applicable)	95.33	95.39	97.58
5	Does patient have a known allergy?	88.80	95.56	92.18
6	Does patient have a difficult airway/aspiration risk?	74.13	—	74.13
7	Does patient have a risk of ≥500 ml blood loss?	74.13	—	74.13
8	Confirm that all team members have introduced themselves by name and role	84.73	—	84.73
9	Surgeon, anesthesia professional (for general anesthesia), and nurse verbally confirm: patient, site, and procedure	80.05	95.56	87.81
10	Surgeon reviews: what are the critical or unexpected stops, operative duration, anticipated blood loss?	51.41	—	51.41
11	Anesthesia team reviews: are there any patient-specific concerns?	60.11	—	60.11
12	Nursing team reviews: has sterility (including indicator results) been confirmed? Are there equipment issues or any concerns?	80.05	—	80.05
13	Has antibiotic prophylaxis been given within the last 60 minutes?	83.80	—	83.80
14	Is essential imaging displayed?	58.59	—	58.59
15	Nurse verbally confirms with the team the name of the procedure recorded	98.75	—	98.75
16	Nurse verbally confirms with the team that instruments, sponge, and needle count are correct	98.75	95.39	97.07
17	Nurse verbally confirms with the team how the specimen is labeled	91.58	93.24	92.41
18	Nurse verbally confirms with the team whether there are any equipment problems to be addressed	93.75	—	93.75
19	Surgeon, anesthesia professional (for general anesthesia), and nurse review the key concerns for recovery and management of this patient	89.08	95.56	92.32
Mean		83.36	94.87	89.12

S, signature; L, specific item for operations performed under local anesthesia.

Table 2. Team Members Item Implementation

	Mean \pm SD (%)	<i>p</i>
Surgeon	78.30 \pm 3.42	≥ 0.05
Anesthetist	72.27 \pm 5.84	≥ 0.05
Nurse	94.66 \pm 2.71	≥ 0.05
Overall team	88.29 \pm 3.02	≥ 0.05

Table 3. Results

Overall Objectives	Global Results (%)	Objectives (%)	<i>p</i>
Operations with checklist done	97.84 \pm 1.56	≥ 90	≥ 0.05
Checklists with the 19 items done	89.12 \pm 2.45	≥ 90	≥ 0.05
At least two signatures presented in the checklist	72.28 \pm 4.78	≥ 90	≥ 0.05

items (anesthetist's signature and items 3, 6, and 11). Nurses were exclusively responsible for nine items (nurse's signature and items 1, 4, 12, 15, 16, 17, 18, and L1). The team shares responsibility for three items (items 8, 9, and 19).

We proposed to achieve at least 90 percent in the three following objectives: operations with checklist done, checklists with all the items done (19 for operations performed under general anesthesia and 10 for operations performed under local anesthesia) and checklists with at least two signatures presented. Statistical differences were analyzed by means of the chi-square test with SPSS 12.0 (SPSS, Inc., Chicago, Ill.) and are expressed as mean \pm SD (95 percent confidence interval).

Results were better for operations performed under local anesthesia (resident surgeons in charge) when compared with operations performed under general anesthesia (94.87 percent versus 83.63 percent). Comparing team member item implementation percentages, we found significant differences with the following order of implementation: nurse, 94.66 \pm 2.71 percent; overall team, 88.29 \pm 3.02 percent; surgeon, 78.30 \pm 3.42 percent, and anesthetist, 72.27 \pm 5.84 percent. In connection with the implementation of the objectives proposed, the first objective was fully achieved (97.84 \pm 1.56 percent); the second objective was also achieved (89.12 \pm 2.45 percent), but the third objective was not achieved (72.28 \pm 4.78 percent) because of surgeons and anesthetists but not the nurses, because they achieved 99.35 percent of implementation. Meanwhile, surgeons and anesthetists achieved 79.35 and 72.28 percent of implementation, respectively.

We recommend the implementation of the Surgical Safety Checklist in plastic surgery patients to optimize staff communication, as a close team and the surgeons complete involvement in this process, because the perception of team function and a climate of safety led by the experience of the surgeon can be associated with

improvements in outcomes. We conclude that Surgical Safety Checklist implementation in plastic and reconstructive surgical patients involves a new philosophy of organization that is easier to achieve in health workers with lower hierarchy, represented in our study by nurses and surgeon residents.

DISCLOSURE

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