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Proposal for a 'surgical checklist' for ambulatory oral surgery

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Abstract. The authors propose a new checklist model adapted for ambulatory oral surgery procedures based on the 'surgical checklist' proposed by the WHO. The proposed document contains 18 items divided into two sets: those that must be verified before beginning surgery and those that must be verified after its completion, but prior to the patient's departure from the site where the surgery is performed. A checklist is an easy-to-use tool that requires little time but provides order, logic and systematization taking into account certain basic concepts to increase the level of patient safety. The authors think that the result is a checklist that is easy to complete and ensures that key patient safety-related matters are dealt with in this field of surgery.

Keywords: surgical checklist; safety checklist; oral surgery; patient safety.

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Patient safety has emerged as an important topic in recent years. Although the damage that could be caused by health care has always been known (Hippocrates: '*primum non nocere*'), it was not until the 1990s that awareness of the importance and quantification of this problem increased. The classical work by Leape et al.[9], completed in 1993, demonstrated that, of all adverse events reported, two-thirds were preventable. Another fundamental study that increased awareness about the importance of this problem was the one completed by the Institute Of Medicine (IOM)[8] in 1999, which demonstrated that 44,000–98,000 unnecessary deaths occurred in the USA in 1997. These data led to concern amongst professionals, political organizations and health care authorities, leading to the increase in studies and measures aimed at improving patient safety over the last 10 years.

All the studies indicate the prescription and administration of drugs as a cause for the increased number of adverse events, as well as surgical activity, nosocomial infections and perioperative complications[3,5,6]. Since the advent of surgery, there has been an awareness of the potential damage it could cause. The data on surgical complications collected in industrialized nations show that the perioperative death rate is 0.4–0.8%, whilst the rate of major complications is 3–17%[3–6]. In industrialized nations, nearly half of all adverse events are related to surgical care[14]. Of these cases, at least half are avoidable[3,5,6,14].

In the light of these data, in 2007, the World Alliance for Patient Safety (which forms part of the World Health Organization) established the 'Global Patient Safety Challenge: Safe Surgery Saves Lives'[14] as its second central objective. This change focused on four large topics: the prevention of surgical wound infections, safe anaesthesia, safe surgical equipment and the measurement of surgical services. As a part of this initiative, the World Alliance for Patient Safety launched the 'Surgical Safety Checklist' in June 2008. This checklist was proposed as a simple, easy-to-use tool to ensure that key patient safety measures are implemented. The development of this checklist was based on three principles: simplicity, widespread applicability and measurability[14]. These three principles

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had to facilitate the dissemination of its use around the world.

The checklist's effectiveness in increasing surgical safety for patients has been greatly demonstrated[2,10,12,13].

The document presented in the form of the checklist (Appendix A) places an emphasis on the need to adapt the checklist to the wide-ranging circumstances, customs and specializations involved in surgical activity[1,7,11]. From this perspective, the authors examine its adaptation to the field of ambulatory oral surgery. This activity possesses certain peculiarities that make it different from major surgery in hospitals, the activity that the checklist of the World Alliance for Patient Safety mainly addresses. Some of its special characteristics include the following. First, its ambulatory nature means there is a lack of control over compliance with the preoperative instructions and any possible postoperative complications. Second, is the major use of local or locoregional anaesthesia, sometimes with the support of sedation procedures. Third, the fact that these procedures are performed at many small public and private centres. This dispersion makes it more difficult to collect data on adverse events and spread the culture of patient safety. Fourth, the limited number of health care staff members who usually take part in this type of surgery, for example when anaesthesia is local or locoregional, it is often administered by the professional without the assistance of an anaesthesiologist. The number of auxiliary staff members also tends to be lower than in hospital surgeries and because of this, the presence of an outside observer is infrequent. Fifth, the limited scope of most of these surgical procedures. Although most meet the requirements established by WHO to be defined as major surgery[14], they tend not to be as invasive as in other fields of surgical activity.

Given these special characteristics, the need arose to adapt the checklist proposed by the World Alliance for Patient Safety to ambulatory oral surgery, thereby respecting the principles of simplicity, ease of use and 'measurability'. Proposing a checklist that fulfils these conditions and which is adapted to the specific world of ambulatory oral surgery is the objective of this work.

Methods

Proposed document (Appendix A)

The document contains 18 items that must be verified, some by the auxiliary staff members in charge of the checklist and others by the professional, with a third set verified by both. The 18 items are divided into two sets: those that must be verified before beginning the surgery and those that must be verified after completing it, but always before the patient leaves the premises where the surgery has been performed. Depending on the item in question, the verification must be performed by the dentist and/or the dental assistant ('dental assistant' means the clinic's auxiliary personnel with specific training in dental care) (Table 1).

Table 1. Verification to be carried out by the dentist and/or the dental assistant for each item on the checklist.

Items to check before beginning surgery

1. Verification of patient identity (by the dental assistant and the professional).
2. Verification of the procedure to be performed (by the dental assistant and the professional).
3. Verification of the surgery area (by the dental assistant and the professional).
4. Verification that the clinical background and radiographic records are available (by the dental assistant and the professional).
5. Verification of the existence of properly completed informed consent documents (by the dental assistant and the professional).
6. Verification that the operating room has been properly prepared:
   - 6.1. Surgical area prepared (by the dental assistant and the professional).
     - 6.1.1. Verification of the asepsis of all surfaces surrounding the patient that may come into contact with the professional's hands (e.g. handle of a light fixture, handheld items, buttons on equipment, and hoses) (by the dental assistant).
   - 6.2. Availability of all the surgical instruments necessary for the procedure and verification of its sterilization labelling (by the dental assistant and the professional).
   - 6.3. Availability of all the materials to be used (e.g. implants, material for grafts, and sutures) (by the dental assistant and the professional).
   - 6.4. Operation of the mechanical instruments (by the dental assistant):
     - 6.4.1. Surgical aspiration.
     - 6.4.2. Rotating instruments.
     - 6.4.3. Other instruments (e.g. electric, ultrasonic).
7. In the event of using sedation by medicinal gases:
   - 7.1. Verifying that the device is working properly (by the dental assistant).
   - 7.2. Verifying the levels of gas in gas tanks and expiration dates (by the dental assistant).
8. Verification in the clinical record of prior pathologies and drugs taken by the patient that might interfere during the course of the surgery (by the professional).
9. Verification of the non-existence of allergies or intolerances that might interfere throughout the course of the surgery (by the professional).
10. Verification of the patient's proper compliance with the pre-operative instructions (e.g. antibiotic prophylaxis, anticoagulant treatments) (by the professional).
11. Verification of the location of and easy access to materials for clinical emergencies (by the dental assistant and the professional).

Items to check immediately after the surgery (before the patient leaves the premises where the surgery is performed)

12. Verification that no exogenous materials have accidentally been left in the surgical area (by the professional).
13. Making a record of the procedure in the clinical record, including technical data, identification and lot number of any exogenous materials used, and potential adverse events produced during the procedure (by the professional).
14. Verification of the proper clinical status of the patient, allowing him or her to leave the health care centre without risks (by the professional).
15. Verification that the patient has received and understands the postoperative instructions and what to do if any complications arise (by the professional).
16. Verification of the proper labelling and sending of any biological samples taken (if necessary, by the dental assistant).
17. Verification or the orderly removal of all the potentially contaminating instruments and materials (by the dental assistant).
18. Reporting of any technical problem detected during the procedure, for its correction (by the dental assistant).

Procedure

The checklist for ambulatory oral surgery was designed to be completed by one person, who should be someone amongst the auxiliary personnel trained in patient safety. This person is to complete the sections corresponding to the auxiliary personnel and ask the professional (dentist or oral surgeon), about the sections for which the professional is responsible. He or she must possess the ability to regulate and even interrupt the procedure if any of the items on the checklist is not verified.

Completion of the checklist is to be carried out at two different times. Before beginning the procedures, the items corresponding to the auxiliary personnel are to be verified, and prior to the treatment and immediately before anaesthetizing and beginning the procedures the professional is to be asked about the preoperative cheques that he or she is to complete. On completing the surgical procedure, but before the patient leaves the medical centre, the person responsible for completing the checklist must ask the professional about the postoperative cheques for which he or she is responsible and ensure that the post-surgical items for which the auxiliary personnel are responsible have been verified.

After verifying the proper completion of all the data, the person responsible for the checklist must sign the document. At a later time, he or she must submit it to the professional, who must also verify it in its entirety before signing it. The document is to be included in the patient's clinical record.

Discussion

A checklist is an easy-to-use tool that does not require much of the dental team's time. It does not introduce any concepts that an experienced clinician does not perform prior to a surgical procedure. The checklist provides order, logic and systematization taking into account certain basic concepts in order to increase patient safety. It is an easy and rapid way to verify the key items involved in patient safety and to avoid mistakes or distractions. The fact that it is included in the patient's clinical record may be of significant value in the event of any legal claims. Owing to all of this, the authors think that the checklist is clearly a positive tool for the dental team.

The proposed checklist (Appendix A) is a model adapted to the practise of ambulatory oral surgery. This is why, unlike that which is proposed by the World Alliance for Patient Safety, it is carried out at two different times (instead of three), and it only requires the intervention of one responsible person between the auxiliary personnel and the dentist or oral surgeon who is going to perform the procedure.

Special emphasis is placed on complying with the preoperative instructions and on a clear understanding of the postoperative instructions because it is intended for the surgical treatment of ambulatory patients. It also ensures that the patient is in the proper physical condition and appropriately accompanied before leaving the clinic.

The checklist items prior to the surgical procedure are common to all surgical checklists: identifying the patient, the procedure to be performed and the area of the procedure. This basic verification is performed by the professional and the auxiliary personnel. The auxiliary personnel must verify the availability of the clinical record and the radiographic records necessary to carry out the treatment. The existence of a properly signed informed consent document is also necessary. These two aspects must be verified by the professional, who must also be certain that the patient has understood the procedure to be performed, what it is for and what potential complications might arise.

The professional must also verify proper compliance with the preoperative instructions by the patient, and the existence of any previously existing pathologies or medications that might affect the treatment.

Both the auxiliary staff and the professional must verify the preparation of the surgical area, including all of the instruments and materials necessary for the intervention. If nitrous oxide is used for sedation, the auxiliary personnel must verify that the equipment is working properly and that it contains the proper level of gases.

Last of all, and this is a very important aspect, both the professional and the auxiliary staff must verify the location of and proper access to the emergency instruments and materials, before beginning the procedure.

Regarding the items on the checklist to be verified after the treatment has been completed, most must be verified whilst the patient is still at the location where the surgery is performed. It has to be verified that no materials or instruments have been left in the surgical area, and that the relevant information on the procedure (and on any possible intraoperative complications) has been recorded in the clinical record.

Finally, before the patient leaves the centre, it must be verified that he or she is clinically well, that the patient has understood the postoperative instructions and that he or she knows what to do if complications arise. It must also be verified that he or she leaves the centre with proper accompaniment. The auxiliary staff must confirm the proper labelling of any biological samples that are to be sent for analysis (where appropriate), the reporting of any possible technical problems that may have arisen (e.g. instrument failures) and the orderly removal of all biologically hazardous materials.

At the end of the entire process, the document must be signed by the professional and the member of the auxiliary staff responsible for completing it. Both must verify that it has been fully completed before signing the checklist. The checklist must be included in the clinical record.

Funding

None.

Competing interests

None declared.

Ethical approval

Not required.

Appendix A

app1

PATIENT: (full name)	PROFESSIONAL: (full name)
SURGERY PROCEDURE	

MEDICAL HISTORY NUMBER:

MHN:.....

DATE _____/_____/_____

		PROFESSIONAL	DENTAL ASSISTANT
1.- Verification of patient identity.		☐	☐
2.- Verification of the procedure to be performed.		☐	☐
3.- Verification of the surgery area.		☐	☐
4.- Verification that the clinical background and radiographic records are available.		☐	☐
5.- Verification of the existence of properly completed informed consent documents.		☐	☐
6.- Verification that the operating room has been properly prepared.	6.1.- Surgical area prepared:	☐	☐
	6.1.1.- Verification of the asepsis of all surfaces surrounding the patient which may come into contact with the professional's hands.		☐
6.2.-Availability of all the surgical instruments necessary for the procedure and verification of its sterilization labeling.		☐	☐
6.3.- Availability of all the materials to be used.		☐	☐
6.4.- Operation of the mechanical instruments.	6.4.1. Surgical aspiration.		☐
	6.4.2. Rotating instruments.		☐
	6.4.3. Other instruments		☐
7.- In the event of using sedation by medicinal gases.	7.1. Verifying that the device is working properly.		☐
	7.2. Verifying the levels of gas in gas tanks and expiration dates		☐
8.- Verification in the clinical record of prior pathologies and drugs taken by the patient which might interfere during the course of the surgery.		☐	
9.- Verification of the non-existence of allergies or intolerances which might interfere throughout the course of the surgery.		☐	
10.- Verification of the patient's proper compliance with the pre-operatory instructions.		☐	
11.- Verification of the location of and easy access to materials for clinical emergencies.		☐	

PATIENT: (full name)	PROFESSIONAL: (full name)
SURGERY PROCEDURE	

MEDICAL HISTORY NUMBER:

MHN:.....

DATE _____/_____/_____

ITEMS TO CHECK IMMEDIATELY AFTER THE SURGERY:	PROFESSIONAL	DENTAL ASSISTANT
12.- Verification that no exogenous materials have accidentally been left in the surgical area.	☐	
13.- Making a record of the procedure in the clinical record, including technical data, identification and lot number of any exogenous materials used, and potential adverse events produced during the procedure.	☐	
14.- Verification of the proper clinical status of the patient, allowing him or her to leave the health care center without risks.	☐	
15.- Verification that the patient has received and understands the post-operatory instructions and what to do if any complications arise.	☐	
16.- Verification of the proper labeling and sending of any biological samples taken.		☐
17.- Verification or the orderly removal of all the potentially contaminating instruments and materials.		☐
18.- Reporting of any technical problem detected during the procedure, for its correction.		☐
Incidents and observations:		

SIGNATURES	PROFESSIONAL:	DENTAL ASSISTANT:
	SIGNATURE	SIGNATURE

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