GUIDE TO TEACHING IN GENERAL SURGERY:

Bases for the resident doctor

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SUMMARY

OUR OBJECTIVE

Subsidize the teaching of basic concepts to the resident physician in general surgery, with a view to improving skills and competencies inherent to surgical practice in accordance with the guidelines and requirements of the Ministry of Education.

PRESENTATION

I graduated in Medicine and entered the Medical Residency in General Surgery and the master's degree in teaching in Health and Environmental Sciences.

During this period, I had many difficulties with the scarcity of didactic-pedagogical materials designed for the specialization.

A material that would make the bridge and the support of the student who graduated in medicine and is in search of the title in General Surgery.

Motivated by this problem and by the need to develop a material to fulfill the obligations of the master's degree, I thought of the development of a basic and practical material, from the perspective of Ausubel's Learning Theory, which would help the optimization of both the study time and the teaching-learning process of the resident physician in General Surgery.

1. INTRODUCTION

The General Surgery Resident's Guide was designed as a basic material of quick access, easy understanding and application of the contents addressed, which, in turn, are based on a matrix of competencies adopted by the Ministry of Education that govern teaching in this medical specialty.

According to an integrative review developed by the authors of this material, there is a lack of research focusing on the development and use of didactic materials that promote the learning of the basic contents required in the General Surgery residency. Added to this is the author's experience during the post-graduation itself, whose observation of the absence of didactic materials focused on the residency in General Surgery hinders the apprehension and application of the content.

This material aims to optimize the teaching-learning process of basic contents required during the Medical Residency in General Surgery based on the guidelines of skills and competencies required by the Ministry of Education of Brazil.

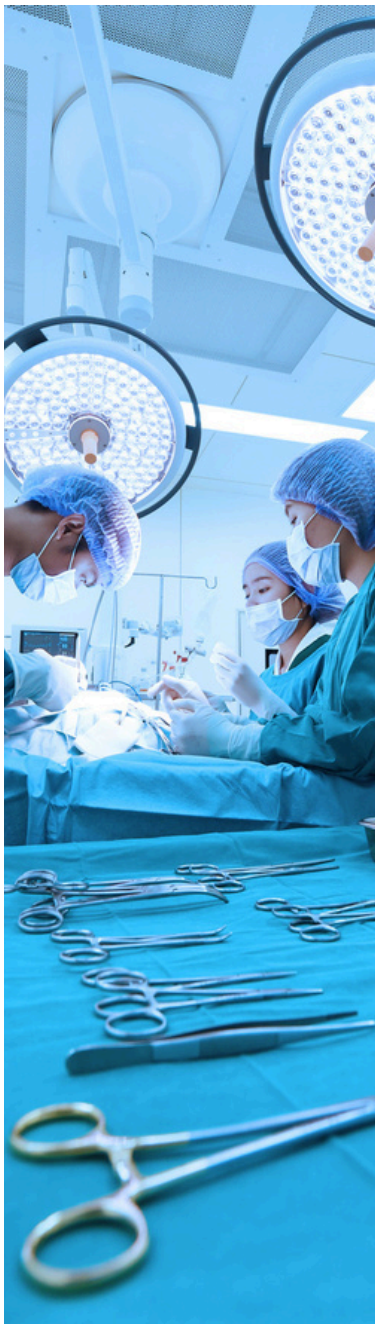
For the optimization of teaching in general surgery, it was decided to elaborate a guide that can be used by the resident physician. Understanding the proposed material as a tool that aims to support the teaching-learning process of the student, it was identified the need to structure the Guide so that the apprehension of new contents was facilitated by the contents previously studied.

In summary, the General Surgery Resident's Guide aims to facilitate the work of preceptors about the content taught to residents, so that they can resort to clear and objective didactic-pedagogical material, due to the mastery of techniques and the necessary skills involved in practical activities in general surgery.

We consider for the structuring of the didactic-pedagogical material, learning theory and the guidelines and norms that govern the Medical Residency in General Surgery in Brazil. The arrangement of the themes dealt with by the Guide arranged in a connective way concepts and possible subsumes relevant to the objectives of the teaching.

The order of the items was defined in a logical and increasing way under the aspect of complexity of the subjects addressed to optimize the teaching-learning process of the learners. In addition, each item was designed so that the student can access them quickly and independently for brief consultations during the daily routine, to resolve brief doubts either for the execution of procedures, for more directed studies and / or content review.

2. HISTORICAL CONTEXTUALIZATION



You are starting Medical Residency in the twenty-first century, but this specialization is older than you can imagine. It is worth locating the historical memory that established the leading path to the present day. Just like in a relay race, the professors, general surgeons, were once where you are.

At the end of the nineteenth century, the surgeon William Halsted (1852-1922) intended the creation of the first Medical Residency program at Johns Hopkins Hospital, creating a teaching-learning model in the medical area (COSTA et al., 2018; TONATTO FILHO et al., 2020). This idea of organization was imported by Brazil in the 1950s, initially, in Rio de Janeiro, by the Hospital dos Servidores do Estado, and in São Paulo, by the Hospital de Clínicas (NACUL et al., 2015; TONATTO FILHO et al., 2020).

Considering that medicine is a science in constant evolution, based on technical development and incorporation of new technologies, it is understood that general surgery does not escape this principle, because it is also in constant transformation, so much so that over the years it has developed new subspecialties, incorporating new technologies, which require from doctors, training and modification of the teaching-learning processes inherent to the teaching that is given to them. (NACUL et al., 2015).

In the hospital, the status of the resident physician is situated in the condition of student, since it is a graduate student in continuous training, acquiring knowledge and technical mastery along with that reality. The authors understand that surgery should be the object of training developed gradually, by steps that increase the complexity of the procedures, requiring adequate time for the physician to master such skills. Therefore, this learning must occur in an accredited service for such activity, with significant surgical volume, under the supervision of a preceptor (NACUL et al., 2015).

In the wake of convergence, Simpson (COSTA et al. , 2018) already indicated that the teaching of practical skills is the central component of surgical education, both of its offer in undergraduate and graduate courses, because the effective learning of psychomotor skills is the result of the interaction of different aspects, among which, the author mentions the environment (practice scenario), the structuring of practice, the teacher/student dialogue and pedagogical strategies.

In general, the Medical Residency is considered an excellent method for training in general surgery, because it is based on in-service training, assisting in the stoning of knowledge and improvement of psychomotor skills of the graduate student (NACUL et al., 2015; COSTA et al., 2018).

In 1977 a decree was issued to regulate Medical Residency and create the National Commission for Medical Residency. Thus, the medical residency in the form of specialization, as a postgraduate modality aimed at physicians (BRASIL, 1977).

In Brazil, medical residency is considered a postgraduate degree that confers on the student the title of specialist, governed by specific laws and regulations, being exercised only in establishments authorized by the Ministry of Education (NACUL et al., 2015). Law 6932 of 1981 governs Brazilian medical residency programs.

Although medical residency is supported by specific legislation, the issues inherent to the teaching-learning processes that occur in their daily lives are not fully entangled by a legislative character. We refer, not to the description of skills and competencies necessary for the surgeon, but to the ways in which these are developed and acquired by the residents.

If, on the one hand, the Residency in General Surgery produces experiences that involve the mastery of techniques and technological resources, on the other hand, intervening factors influence the entire period of specialization.The demands of public health, lack of inputs, human resources and infrastructure, interpersonal relationships, etc., coexist with the demands inherent to teaching. Thus, it is up to preceptors and students to establish strictly objective ways to master the contents and protocols inherent to surgical practice.

The present item was organized based on the didactic sequence model, such as that adopted in a traditional class. You should read the text-synthesis and look in the supporting material (bibliographical references) for complementary contents to the historical contextualization presented.

Reference

BRASIL. Decreto no 80281, de 05 de setembro de 1977. Regulamenta a Residência Médica, cria a Comissão Nacional de Residência Médica e dá outras providências. Diário Oficial da União. Disponível em: < Microsoft Word - d80281.doc (mec.gov.br) >. Acesso em 13 dez 2020.

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COSTA, Grijalva Otávio Ferreira da et al. Taxonomia dos objetivos educacionais e as teorias de aprendizagem no treinamento das técnicas cirúrgicas laparoscópicas em ambiente de simulação. Rev. Col. Bras. Cir., Rio de Janeiro, v. 45, n. 5, e1954, 2018. Available from <http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0100-69912018000500400&lng=en&nrm=iso>. access on 31 Oct. 2020. Epub Oct 18, 2018. http://dx.doi.org/10.1590/0100-6991e-20181954.

NACUL, Miguel Prestes; CAVAZZOLA, Leandro Totti; MELO, Marco Cezário de. Situação atual do treinamento de médicos residentes em videocirurgia no Brasil: uma análise crítica. ABCD, arq. bras. cir. dig., São Paulo, v. 28, n. 1, p. 81-85, 2015. Available from <http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0102-67202015000100081&lng=en&nrm=iso>. access on 30 Oct. 2020. https://doi.org/10.1590/s0102-67202015000100020.

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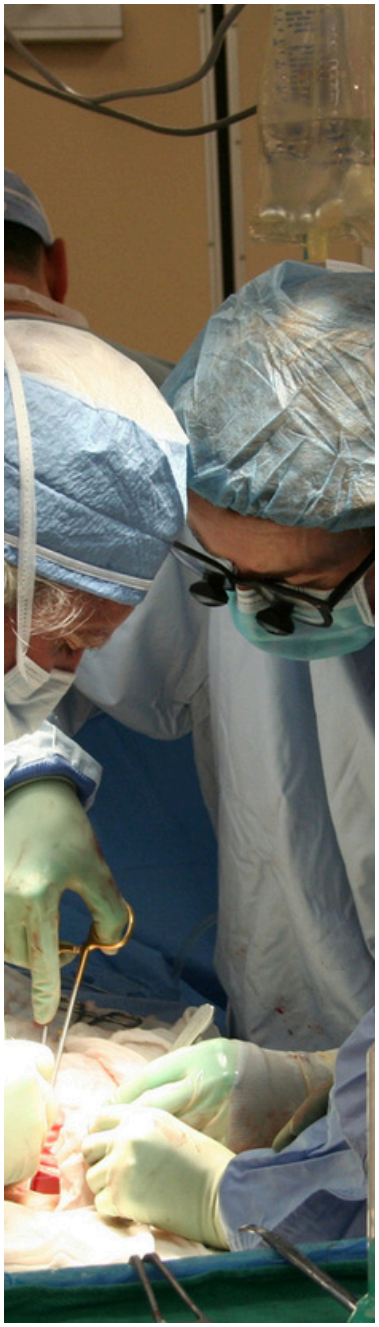
Simpson E. The classification of educational objectives in the psychomotor domain: The psychomotor domain. Washington, DC: Gryphon House; 1972.

TONATTO FILHO, Antoninho José et al. O Reflexo do Aumento de Vagas da Residência de Cirurgia Geral no Brasil. Rev. bras. educ. med., Brasília, v. 44, n. 1, e007, 2020. Available from <http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0100-55022020000100213&lng=en&nrm=iso>. access on 30 Oct. 2020. Epub Mar 13, 2020. http://dx.doi.org/10.1590/1981-5271v44.1-20190178.ing.

3. CLINICAL HISTORY:

Traditional Anamnesis and SOAP



Before our patient arrives at an operating table, it is necessary that he undergoes a clinical interview and physical examination to obtain diagnostic hypotheses and, therefore, define the best possible therapeutic plan.

Thinking about it, in this item you will learn and/or recall concepts related to the clinical history of the patient through the traditional anamnesis and the structuring of the clinical interview based on problems with the use of the mnemonic SOAP (Subjective, Objective, Evaluation and Plans).

The present item was organized based on the didactic sequence model, such as that adopted in a traditional class.

You should read the text-synthesis and look in the support material for content complementary to the clinical .interview

The physician in his professional actions is based on the clinical method, whose basic composition is anamnesis added to the physical examination. This technique is transformed into an instrumental skill for the proper exercise of the profession that can be focused on the person, the disease or the doctor himself (FONSECA et al, 2013).

"To properly obtain the information during the interview and establish a good relationship with the patient, the doctor needs to know how to speak clearly and effectively, and, especially and what is more difficult, know how to listen" (ENGELHORN, 2019).

The clinical history extracted during a medical interview is defining of the patient's clinical outcome, since it is possible to suspect pathologies, formulate diagnostic hypotheses and assist in conducting the therapeutic plan. The technique for such extraction is called anamnesis with several systematics for its use, and it is important to emphasize that it is not an exclusive technique of medicine.

""The medical examination is initiated by the interview, which has a dual purpose: (a) to obtain information about the person and (b) to establish a good doctor-patient relationship. It is an activity that is influenced by many origins: environmental, historical, personal, collective, cultural, symbolic" (FONSECA et al, 2013).

The anamnesis, called here traditional, presents itself with a more comprehensive structure, seeking various details regarding the health of the same, however less objective, thus requiring more time available for its application. Thus, it is generally applied to the first meeting of the subjects of the action, thus establishing a closer doctor-patient relationship, enabling the health professional to better know the patient's health status. After applying this interview methodology, the physical examination, diagnostic hypotheses and medical conduct are pursued.

In order to complement the anamnesis, we can make use of the systematization called SOAP, anagram of Subjective, Objective, Evaluation and Planning, created by Lawrence Leonard Weed (1923-2017) that assists in the registration of the patient's clinical history. Such a system allows the physician to approach the patient holistically and objectively (CARVALHO et al., 2019).

It is used as a way of following medical consultations, as it allows the clinical history to be oriented to the problems presented by the client, providing optimization of the work of the health team.

3.1 ANAMNESIS

The anamnesis, as previously stated, is part of the clinical method and should be used at the beginning of the consultation, allowing the orientation of the physical examination and the subsequent outcomes of the medical consultation. This stage is one in which the physician needs to listen to the patient and signify his complaints, anxieties, feelings, social context in which he is inserted.

According to Fonseca et al. (2013), the anamnesis typified as comprehensive and, here called traditional, has the characteristic of strengthening the doctor-patient relationship and obtaining more personalized information, thus being more appropriately used in consultations with novice patients.

We can divide it into several segments such as:

a)Patient identification	Stage that includes name, age, marital status, profession, religion among other items.
b) Main Complaint and/or Reason for Inquiry	É It is the reason for the medical consultation in which the patient will bring their discomforts and needs, thus guiding the conduct of the medical interview.
c) History of Current Disease (HDA)	This question details the main complaint and/or reason for the consultation, determining the chronology of the facts, modes of appearance and disappearance of signs and symptoms.
d) Past Pathological History (PPH)	At this stage, we look for pathologies that the patient has presented in the past or is still a carrier, previous surgeries, drug allergies.
e) Family History (FH)	It is the moment in which the patient is questioned about the pathologies present in his relatives such as malignant neoplasms, arterial hypertension, diabetes mellitus, psychiatric disorders, among others.
f) Social History	It is understood the habits of life practiced by the patient such as smoking, alcoholism, practice of physical activity, eating habits.
g) System Review	At this moment of the medical interview, prior to the physical examination, data that the patient does not remember and/or does not consider important is sought, to make the previously acquired information more accurate.

3.2 SOAP AND ITS PRACTICAL APPLICATION

The SOAP, as previously stated to an anagram that systematizes the medical interview and its outcomes in a logical, linear and gradual way, because in addition to providing a more objective anamnesis, focused on the patient's problems, condenses with it the physical examination and result of complementary tests, thus resulting in formulations of diagnostic hypotheses and list of problems with consequent proposition of medical intervention through the construction of therapeutic plans. It is important to emphasize that it is imperative to follow the sequence of systematization during application.

The first part of the SOAP, called Subjective, is the one to which the health professional should proceed with the medical interview seeking to hear complaints, reasons for the consultation, problems presented. If we pay attention to it, we can see that it is equivalent to the traditional anamnesis, but more objective and focused on the problems presented by the subject in a subjective way. This follow-up will guide the rest of the medical consultation, especially the second follow-up.

The second part of the SOAP, called the Objective, is presented with the data provided by the physical examination of the patient and results of complementary tests. It is important to emphasize that such data are only relevant if they are oriented, compared and evaluated in the light of the medical interview.

The third step of SOAP, the Evaluation, is the result of the condensation of the objective and subjective data of the clinical meeting. It is in this section that we have the possibility to formulate diagnostic hypotheses, list of problems presented by the patient and enumeration of signs and symptoms present.

Finally, the fourth and final stage, the Planning, where the health professional, based on the evaluative stage, outlines conduct, intervention proposals, planning of actions such as prescription of medication, request of complementary tests, various orientations, referrals, among others.

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Now we will reinforce the application of SOAP by viewing the following video, available on the YOUTUBE® platform and easily accessed through the QR CODE and access link.

Figure 1 - SOAP

Link: https://youtu.be/aNpOl-JgRoA

ARTICLES/SUPPORTING MATERIAL:

Articles	Links
1) El Registro Médico Orientado por Problemas	http://ateneo.unmsm.edu.pe/bitstream/handle/123456789/1191/anales_de_la_facultad_de_medicina05v59n1_1998.pdf?sequen ce=1&isAllowed=y
2) Registro Clínico Baseado em Problemas como instrumento para desenvolver co mpetências em programa de residência médica	https://doi.org/10.1590/1981-5271v45.2-20200289 - https://www.scielo.br/j/rbem/a/DSxxsHbGZpWJLcnZmtVPqVQ/abstract/?lang= pt
3) Evaluación de los registros médicos electrónicos orientados a problemas, en los internos y tu tores de la carrera de Medicina de la Universidad de Guayaquil durante la rotación extramural	http://201.159.223.180/handle/3317/13158
4) Formação Médica na UFSB: III. Aprendizagem Orientada por Problemas e Competências	http://201.159.223.180/handle/3317/13158
5) Manual de Condutas e Procedimentos para Estudantes d a Área de Saúde: A jornada acadêmica em busca da excelência	http://editora.unifoa.edu.br/wp-content/uploads/2019/05/Manual-de-Condutas-e-Procedimentos-online. pdf

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CARVALHO, I. P.; et al. História clínica orientada para problemas – SOAP. In: CARVALHO, I. P.; et al. (org.). Manual de condutas e procedimentos para estudantes da área de saúde: a jornada acadêmica em busca da excelência. Volta Redonda: FOA, 2019. p. 66. Disponível em: < Manual-de-Condutas-e-Procedimentos-online.pdf (unifoa.edu.br) >. Acesso em 23 mar 2021.

ENGELHORN, Carlos Alberto. O Uso do Role-Play no Ensino da Técnica de Anamnese e de Habilidades de Comunicação para Estudantes de Medicina. Rev. bras. educ. med., Brasília, v. 43, n. 3, p. 178-183, July 2019. Available from <http://www.scielo.br/scielo.php?script=sci_arttext&pid=S0100- 55022019000300178&lng=en&nrm=iso>. access on 23 Mar. 2021. Epub May 23, 2019. https://doi.org/10.1590/1981-52712015v43n3rb20180243.

FONSECA, W. L. M. S et al. Introdução: O método clínico. In:_____ (org.). Manual de Condutas Práticas: Semiologia Médica. Volta Redonda: FOA, 2013. p. 11-13.

Lown B. A arte perdida de curar. São Paulo: JSN,1997.

PORTO, C. C. et al. Semiologia Médica. 6. ed. Rio de Janeiro: Guanabara Koogan, 2009.

4. SURGICAL DRESSING

With the collection of the clinical history, the performance of the physical examination, the formulation of diagnostic hypotheses and the definition of the best possible therapeutic plan defined by you, resident physician, and your team and, after adopting the steps of patient safety mentioned above, now is the time to think about the surgical procedure itself.

In this item you will remember and deepen a fundamental and mandatory item for the realization of a safe surgical procedure for your patient, for your team and for you, the surgical paramentation. This item seeks to describe the main garments, the correct way to wear them and their importance.

You, dear colleague, should read the text-synthesis and look in the support material and references used complementary contents to the surgical paramentation.

You are in the Medical Residency in General Surgery and eager to perform the surgical procedure, however, for the success of the same, it is necessary to remember concepts learned during medical school and deepen them throughout your specialization.

The success of your act depends on the linking of theory (this guide in question) with practice (the surgical procedure in front of you). So, let's dress up and prepare our patient for the surgery.

The first step is to go to the locker room, located in a restricted area in the operating room, for the beginning of the dressing by putting on the pajamas, which, in turn, must follow the technical specifications of biosafety adopted by the hospital. Such garments are usually restricted to transit within the operating room. Do not forget to also put the props, the surgical mask and the cap (MORCHE et al., 2018). Once this is done, we can enter the operating room.

In the operating room, after correct positioning of the patient and cleaning of the region that will be submitted to the operative act, we will proceed to hand washing, essential slap for an optimal surgery.

It occurs before putting on the sterile gloves, presents its own rigorous technique for correct cleaning of the hands and, consequently, provides a safe surgical procedure. (MITTELDORF, 2008; MORCHE et al., 2018).

In the next few minutes, we ask you to watch the video carefully that assists us in both the correct washing of hands and the paving of gloves.

Figure 2 - Handwashing

https://youtu.be/yY7JRCab5oo

After the stage of hand washing, we can proceed with the stage of placing the sterile surgical gowns, the tying of which is usually performed on the surgeon's back by a circulating assistant. Once this is done, we move on to the phase of placing the gloves, which will serve as protection for both the surgical team and the patient (MORCHE et al., 2018).

It is important to note that you should already enter the operating room knowing the size of your glove, because it will be a frequent question of who will instrument the surgeons. This phase requires certain training, so we recommend that the student perform the placement of the gloves with proper technique in a rigorous way.

As important as knowing how to put on the gloves, is to barefoot them to protect yourself from contamination.
Thinking about it, it is important to watch the following video that teaches us how to remove contaminated gloves respecting the principles of biosafety.

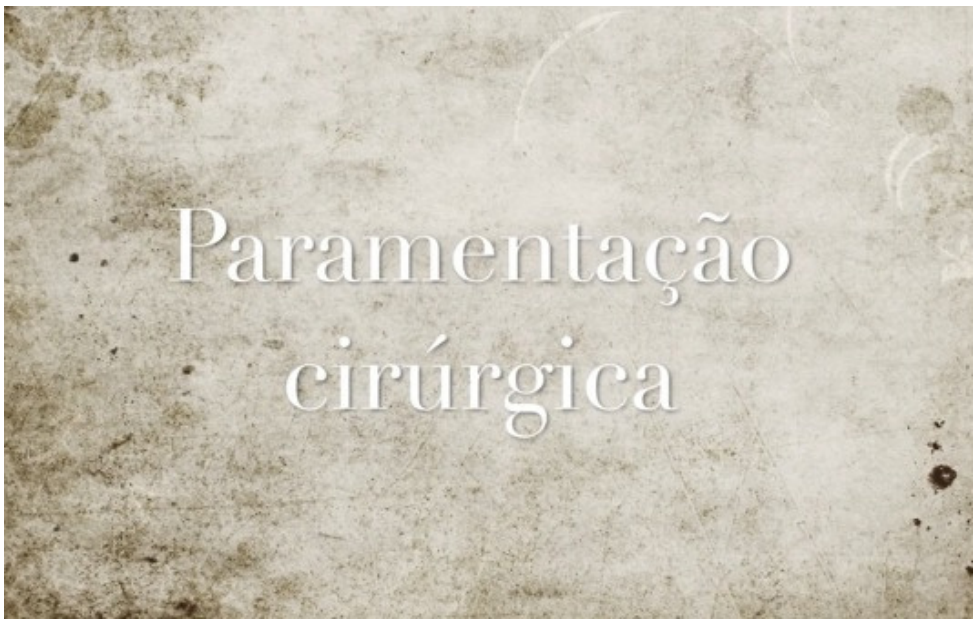
Figure 3 - Taking off surgical gloves

https://youtu.be/qa9VEvPiXGk

After the surgical team performs hand washing, the placement of the sterile apron and gloves, the stage of antisepsis of the surgical site is proceeded. Once this is done, the sterile fields are placed that will protect the surgery site. (MITTELDORF, 2008).

Now we will reinforce the correct use of SURGICAL CLOTHING by viewing the following video, available on the YOUTUBE® platform and easily accessed through the QR CODE and access link.

Figure 4 - Surgical attire



https://youtu.be/MgURBdYz1lA

4.1 Articles/Support material

Articles	Links
1) Paramentação cirúrgica: artig o de revisão	http://bases.bireme.br/cgi-bin/wxislind.exe/iah/online/?IsisScript=iah/iah.xis&base=LILACS&lang=p&nextAction=lnk&exprSearch=702907&indexSearch=ID
2) Eficácia de três métodos de degermação das mãos utilizando gluc onato de clorexidina degermante (GCH 2%)	https://www.scielo.br/j/reeusp/a/ymtjqwGfpQStTQdFLcJCmCd/?lang=pt - https://doi.org/10.1590/S0080-62342011000600023
3) Disposable surgical face masks for preveting surgical wound n infection in clean surgery	https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7138271/

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MITTELDORF, Cornelius. Infecção em Cirurgia. In: GAMA-RODRIGUES, J. J.; MACHADO, M. C. C.; RASSLAN, S (ed.). Clínica Cirúrgica. Barueri: Manole, 2008. p. (144- 150).

MORCHE, K. R.; BERTINATTO, R. J.; ALBUQUERQUE, B. Z.; ALVES, C. G.; DIAS, G. F.; CHIES, V. T. Z.; REBELATO, M. R. S.; OLIVEIRA, M. P. TÉCNICA OPERATÓRIA: CONCEITOS BÁSICOS PARA ACADÊMICOS. ACTA MEDICA, Porto Alegre, v. 39, n. 1, p. 73-82, 2018. Disponível em: https://editora.pucrs.br/edipucrs/acessolivre//periodicos/acta-medica/assets/edicoes/2018-1/arquivos/pdf/7.pdf. Acesso em 19 abr. 2022..

5. PATIENT SAFETY IN SURGERY

The time has come to think about a question that is vital to the success of the surgery and that helps to minimize the possibility of the occurrence of unfavorable advents for the patient, the surgical procedure and the team involved: the safety of the surgical patient.

Poor communication among the health professionals who make up the team and leadership difficulties are the factors that most contribute to the occurrence of an unsafe surgery (The Joint Commission, 2006).

Patient identification and surgical site design, patient involvement in preoperative planning, informed consent, better team communication, and improved teamwork and protocols can help reduce complications and errors. Since 2000, the elimination of incorrect locations, patients and procedures has been a goal of the Joint Commission (WHO, 2009).

The establishment of the National Patient Safety Program (PNSP) aims to help improve the quality of Brazilian health care. The surgical patient safety protocol consists of ten goals (BRASIL, 2023):

GOAL 1 - The team will operate on the right surgical site and the right patient;

GOAL 2 - The team will use known methods to prevent damage in the application of anesthetics, while safeguarding the patient from pain;

GOAL 3 - The team will identify and be securely aligned for loss of airway or respiratory function that endangers the patient's life;

GOAL 4 - The team will distinguish and be effectively prepared for the possibility of major blood loss;

GOAL 5 - The team will examine the patient's history and look for previous occurrences of adverse reaction or allergic reaction to the drugs and avoid inducing them;

GOAL 6 - The team will systematically use known methods aimed at minimizing the risk of infection of the surgical site;

GOAL 7 - The team will frustrate the unsuspecting maintenance of materials at the surgical sites;

GOAL 8 - The team will accurately preserve and specify all surgical specimens;

GOAL 9 - The team will maintain effective communication and exchange information for the safe conduct of the surgical procedure;

GOAL 10 - Hospitals and public health systems will consolidate routine surveillance on the capacity, volume, and outcomes of surgical procedures.

Source: authors (2022)

5.1 Articles/Support material

Articles	Links
1) Patient safety in hospital - emergency department - a systematic reviewo	https://www.scielosp.org/article/csc/2022.v27n5/1803-1812/
2) Patient safety in emergency situations	Segurança do paciente em situações de emergência / Patient safety in emergency situations | Brazilian Journal of Health Review (brazilianjournals.com.br)
3) Construction and validation of a primer for perioperative guidance and patient safety	Construção e validação de cartilha de orientação perioperatória e segurança do paciente | Revista Gaúcha de Enfermagem (ufrgs.br)

References

BRASIL. Ministério Da Saúde. Programa Nacional de Segurança do Paciente (PNSP). 2023. Disponível em: https://www.gov.br/saude/pt-br/acesso-a-informacao/acoes-e-programas/pnsp. Acesso em: 15 jan. 2023.

Organização Mundial da Saúde (OMS). Manual Cirurgias Seguras Salvam Vidas: segundo desafio global para a segurança do paciente. 2009. Disponível em: cirurgias-seguras-salvam-vidas-manual (www.gov.br). Acesso em: 5 dez. 2022.

THE JOINT COMISSION. Sentinel event statistics. 2006. Disponível em: http://www.jointcommission. org/SentinelEvents/Statistics. Acesso em: 5 dez. 2022.

6. TRACHEOSTOMY

It is time to discuss a little about Tracheostomy, which is nothing more than a surgical procedure in which a hole is made in the trachea and communication is established between it and the external environment.
This procedure is indicated in cases such as major trauma of the face, need for conversion of orotracheal intubation, airway obstruction, among others. As possible complications we can highlight bleeding, fistulas, swallowing disorders and tracheal stenosis (AVINO, TONATTO FILHO, 2017; Medeiros et al., 2019).

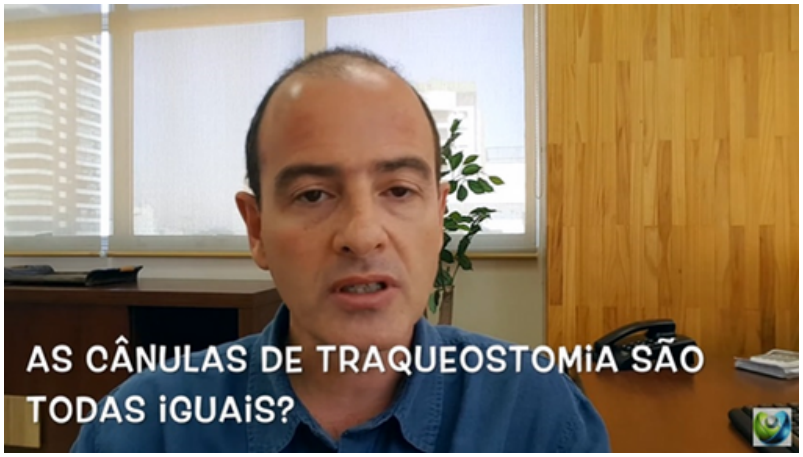
A fundamental step for the success of the procedure is the choice of the tracheostomy prosthesis/cannula.
Such evaluation is anchored in the clinical moment in which the patient is. As examples of the types of cannulas we can mention those of metal, of plastic polymers, with or without the cuff. Another peculiarity that must be considered is the length and diameter (BRASIL, 2020).

Usually in those patients dependent on mechanical ventilation or those who require protection of the airway against secretions or bleeding, plastic cannulas with cuffs are chosen.

Those patients who do not need ventilatory support or who will use tracheostomy for a long period, opt for the use of the metallic cannula, because they have lower chances of obstruction, caused by secretion, and the possibility of being easily cleared and sanitized (AVINO, TONATTO FILHO, 2017).

For decannulation, it is opted for the exchange of the plastic cannula to the metallic one, and then occlusion of the cannula to evaluate spontaneous breathing and elimination of secretion through the mouth (CÔRTE et al., 2019).

In order to visualize such differences and particularities of the cannulas, I invite you to watch the following video:



https://youtu.be/Q9UlLz9ackI

The surgical technique of tracheostomy, according to Avino and Tonatto Filho (2017, p. 66), should follow the following logical sequence:

1. The procedure begins by putting into practice the patient safety protocol, described in more depth in the chapter on surgical patient safety, which will permeate the entire surgical procedure. Such a procedure can be performed in the operating room or other hospital environments such as the ICU;

2. After that, the patient should be correctly positioned in the supine position, upper limbs in adduction and optimized cervical hyperextension with the use of a cushion under the shoulders. General anesthesia or local anesthesia can be used;

3. Once this is done, we will proceed to the items described in the chapter on surgical clothing, such as hand washing, placement of the surgical apron and gloves, asepsis of the anterior part of the chest and neck and the correct positioning of the surgical fields;

4. For the dieresis we will use the physical examination and demarcation of the furcula and cricoid cartilage, our anatomical references;

5. With this we will proceed to the transverse incision (about 3 centimeters) until reaching the subcutaneous and, after rigorous hemostasis, we will start to open the platysma muscle and, later, the removal of the infrahyoid muscles;

6. We will move the isthmus away from the thyroid gland and we will have exposed tracheal rings. Between the second and third tracheal ring, we will make a "T" type incision in the membrane. We will proceed with the repair of the tracheal flaps using suture threads. With this, we have safety for the introduction of the cannula with special attention to the posterior wall of the trachea and care not to create false paths;

7. With the correct positioning of the cannula, we can proceed to the rigorous review of hemostasis and closure of the skin. Once this is done, we fix the cannula with tape that will pass between the wings of the cannula and the patient's neck.

To optimally sediment this content, I suggest we watch the video below:

https://youtu.be/1NOS1DH_lV4

6.1 Articles/Support material

Article	Links
1) Percutaneous tracheostomy surgical technique in the patient with COVID-19	https://doi.org/10.30944/20117582.607
2) Recommendations for performing tracheostomies and care of tracheostomized patients in Colombia during the COVID-19 pandemic	https://doi.org/10.30944/20117582.617
3) Standardization of elective tracheostomies at the Central Institute of the Hospital das Clínicas in São Paulo during the COVID-19 pandemic	https://doi.org/10.1590/0100-6991e-20202574

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