

Educative material for English-speaking patients undergoing general anesthesia in elective surgeries

Most important matters to know before an operation

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KNOW MORE ABOUT GENERAL ANESTHESIA

General anesthesia has been used for decades in various surgeries. It has been proven to be very safe when undergoing an operation that requires general anesthesia.

What does general anesthesia mean?

- General anesthesia is a combination of several medical substances that put you in to very deep sleep
- There are different forms of general anesthesia such as a substance that will go straight into your veins and blood circulation which makes falling into sleep faster
- Other type is inhalation mask that contains medical gas which is safe for your body and puts you to sleep
- Do not be afraid of waking up during the general anesthesia
 - It rarely happens because you are being monitored carefully throughout the operation
 - 1 to 3 cases in 1000
 - Most likely if you wake up during the operation you are not able to remember it

Properties of Intravenous Anesthetic Agents

Picture (Saeed 2013)

| Drug | Induction and Recovery | Main Unwanted Effects | Notes |
|-------------------|---|--|--|
| thiopental | Fast onset (accumulation occurs, giving slow recovery) Hangover | Cardiovascular and respiratory depression | Used as induction agent declining. ↓ CBF and O ₂ consumption Injection pain |
| etomidate | Fast onset, fairly fast recovery | Excitatory effects during induction Adrenocortical suppression | Less cvs and resp depression than with thiopental, Injection site pain |
| propofol | Fast onset, very fast recovery | cvs and resp depression Pain at injection site. | Most common induction agent. Rapidly metabolized; possible to use as continuous infusion. Injection pain. Antiemetic |
| ketamine | Slow onset, after-effects common during recovery | Psychotomimetic effects following recovery, Postop nausea, vomiting, salivation | Produces good analgesia and amnesia. No injection site pain |
| midazolam | Slower onset than other agents | Minimal CV and resp effects. | Little resp or cvs depression No pain. Good amnesia. |

CBF = Cerebral blood flow

O₂ = Oxygen

CV = Cardiovascular

CVS = Cardiovascular system

Adrenocortical suppression = Lack of adrenalin

Antiemetic = Nausea preventative drug

Psychotomimetic effect = Mental indifference

Amnesia = Loss of memory

Inhalation anesthetics

- Inhaled anesthetics decrease the information to rise from the spinal cord to the brain
 - Depresses cerebral blood flow and glucose metabolism
- Causes loss of pain, hypnosis and amnesia
- Most common inhalation anesthetics:
 - Halothane, isoflurane, sevoflurane and desflurane
- The anesthetic mixes with your blood circulation
- Right amount of the anesthetic agent flowing puts you to sleep and keeps you in deep sleep
 - This is called surgical level of anesthesia
- Risks are even smaller than with intravenous anesthetics

What do you need to know before going to the surgery?

- If you are having questions what to do before the surgery, talk to your nurse or doctor for more information
- You will be guided thoroughly through the procedure
- You will be handed a checklist what to do before going to the hospital
- Usually you should **NOT** eat after 10 pm on the day before operation
 - In the morning you can drink a little water
 - If you have your own medications, ask the doctor about them before intake
- Remove your jewellery and leave them home
- You should shower at home before coming to the hospital
 - Brush your teeth, remove fingernail polish and wash fingernails and genital area
- Do **NOT** put any cologne or parfyme on
- Keep the skin of the surgical area in good condition
- Bring your KEELA or health insurance card with you
- If you are a smoker, try to stop or at least reduce smoking weeks before the surgery
 - Add excercise to improve your lungs and general condition

On the operation day

- Check in to the hospital
- You will receive hospital clothing for the operation
- Bringing a close relative or a friend with you may ease up if you are nervous
- Listening to relaxing music is good way to get mind off of the operation
- Your premedication may be a pain medication and/or a sedative that makes you sleepy and reduces anxiety
- Before the operation you are supposed to empty your bladder
 - If the operation is long, the nurse will insert a catheter into your urinary bladder that will be attached through the operation
 - A nurse will remove the tube when you are able to walk to the toilet
 - The tube is called urinary catheter
- If there is body hair on the surgical area, a nurse will remove it before the surgery
 - You can do this on your own at home if you want but try to be careful and do not get wounds
- The surgical team is very professional and have made many of these kind of operations

What happens in the operating room?

- You are transferred from waiting area to the operating room
- First you are being identified and the operation is ensured to be correct
- The anesthesiologist is the specialized doctor who puts you to sleep
- The anesthesiologist might ask you few questions like:

Questions:

1. When is the last time you ate?
2. Have you have previous general anesthetics, if yes did you have any complications?
3. Do you have any allergies towards medical substances

Procedures in the operating room

- The anesthesiologist or a nurse will insert an IV cannula which is a little plastic device that will open an access to your vein for medical substances, this might sting just a little bit
- You will receive several medical substances which makes you sleepy very quickly
- You are being anesthetized before inserting drain or urinary catheter so you will not feel any discomfort
- If there is bleeding in the surgical area, a doctor will insert a tube to the spot where the bleeding occurs and it will gather the blood from the surgical wound. A nurse or a doctor will remove the tube when the bleeding has stopped
 - This tube is called drain
- If the operation is long, the nurse will insert a catheter into your urinary bladder that will be attached through the operation
 - A nurse will remove the catheter when you are able to walk to the toilet
- The next thing you know the operation is over and you are waking up in the recovery room

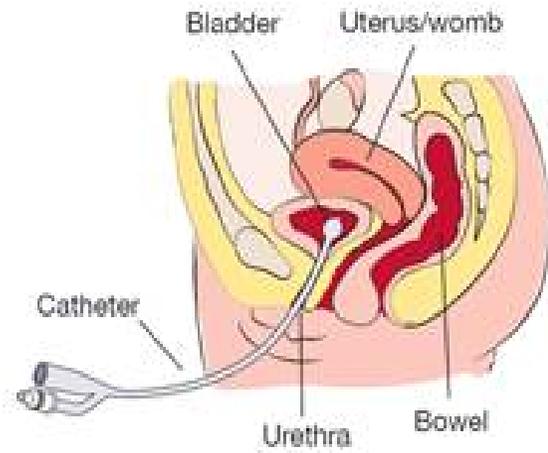


Figure 1 - Female catheter

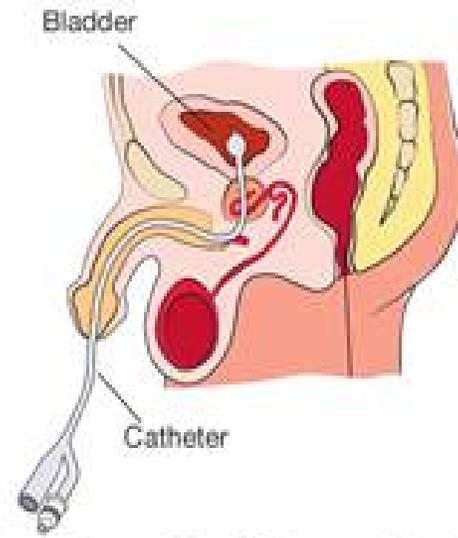
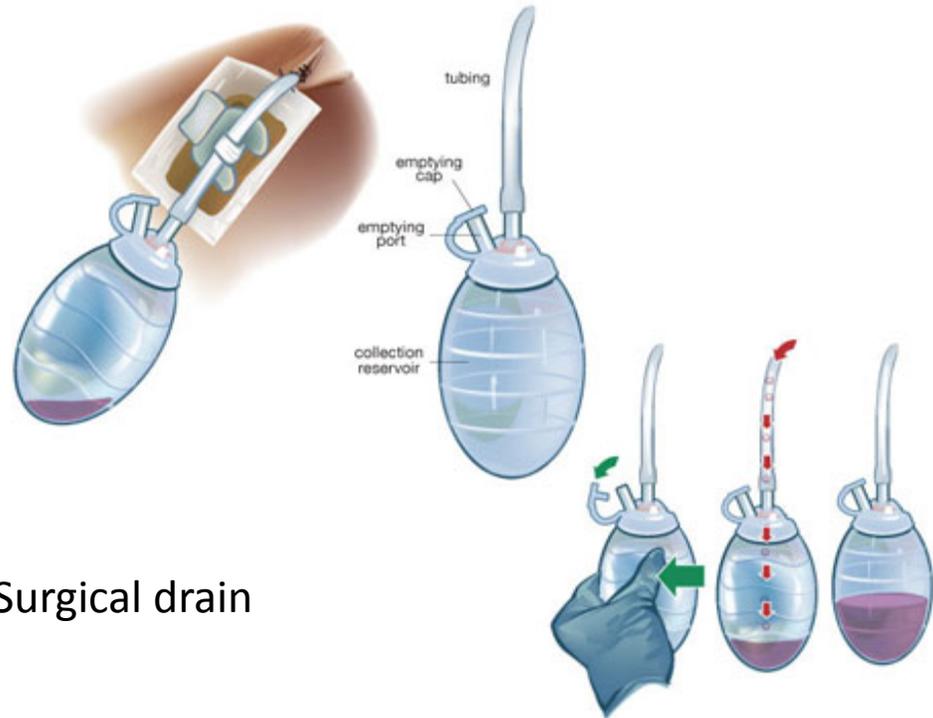


Figure 2 - Male catheter



Surgical drain



IV cannula

After the operation

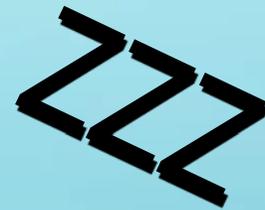
- You are now in the recovery room waking up
- There will be a nurse all the time taking care of you
- The anesthesiologist will come and check on you when you are awake
- There might be some pain after the operation but you will receive painkillers so you do not need to suffer from pain
- You might feel some dizzy for a while but it goes away in few hours
- There are some monitoring devices attached to you
 - ECG: Heart monitoring leads that informs your heart rate and rhythm
 - Pulse oximeter: Monitoring device on your finger tip that informs your oxygen saturation which means how well are getting oxygen into your lungs
 - Blood pressure cuff around your arm to monitor your blood pressure
- If you wake with a plastic tube in your throat, do not be afraid
 - It is there to help you breath and keep your airways open until you wake up
 - If you are feeling nauseus you can ask medication for it, usually all the patients are given a preventative medication for nausea right after the operation
 - You might have a sore throat because of the tube
- More information about risks and possible complications:
 - <http://www.surgeryencyclopedia.com/A-Ce/Anesthesia-General.html>

Recovering from general anesthesia

- While you are still in hospital
 - Try to maintain good hand hygiene
 - You can not shower right away after the operation
 - If the doctors want to have you in the hospital for more monitoring try to be compliant
 - Nurses will help you with everyday actions until you are able to do them on your own
 - Have visitors to see you if you are transferred in to a ward for recovery and further monitoring
 - Usually your stay at hospital is from few hours to few days depending on your operation and condition
 - It is recommended to take the prescribed pain medication regularly
- If you are discharged at the hospital on the same day
 - Have a family member or a close friend with you over night
 - Let yourself be pampered
 - Wear loose clothing for at least few days
 - Have healthy food and drinks
 - Follow the given guidelines from the doctor or nurse to recover
 - Do not try to strain yourself and the surgical area for few days
 - Rest and relax



Do not be afraid
You are with professionals
Relax
Enjoy your nap



References

- Aman, J.L, 2013. 5 Ways To Cure Hospital Anxiety, Surgery Fears, Fear of Medicine. Accessed on 1.12.2016. Available at: <http://www.healthyplace.com/blogs/anxiety-schmanxiety/2013/04/hospital-anxiety-surgery-fear-and-medicine-worry/>
- Doss, R. Last updated Sep. 2015. Ventilator Breathing Complications After Surgery. Overview. Accessed on 30.11.2016. Available at: <http://www.livestrong.com/article/169020-ventilator-breathing-complications-after-surgery/>
- Encyclopedia of surgery. Anesthesia, general. Accessed on 8.12.2016. Available at: <http://www.surgeryencyclopedia.com/A-Ce/Anesthesia-General.html>
- Eskola, N. 2014, Kirurgisen Potilaan Hoito – Perioperatiivinen Hoitotyö, Lähteet: Duodecim, Terveyskirjasto, Sairaanhoito ja Huolenpito: Anttila, Hirvelä, Jaatinen, Polviander, Puska. Accessed on 14.11.2016. Available at: <http://www.slideshare.net/NinaEskola/kirurgisen-potilaan-hoito>
- John Hopkins Medicine. 2015, What is pulse oximetry? Accessed on 30.11.2016. Available at: http://www.hopkinsmedicine.org/healthlibrary/test_procedures/pulmonary/oximetry_92,p07754/
- Khan, S.K.; Hayes, I.; Buggy, D.J. 2013. Pharmacology of anaesthetics II: inhalation anesthetic agents. Continuing Education in Anaesthesia, Critical Care & Pain JO. Accessed on 8.12.2016. Available at: <http://ceaccp.oxfordjournals.org/citmgr?gca=bjarev%3Bmkt038v1>
- Mendonca, C. 2006, Monitoring During Anaesthesia and Recovery, Warwick Medical School- Handbook of Anaesthesia. Accessed 30.11.2016. Available at: https://www.mededcoventry.com/Specialties/Anaesthetics/Handbook/4_Monitoring_During_Anaesthesia_and_Recovery.pdf
- Revelant, J. 2014. How to feel calm before surgery. Accessed on 1.12.2016. Available at: <http://www.foxnews.com/health/2014/10/24/how-to-feel-calm-before-surgery.html>
- Underwood, C. Medically Reviewed 2015, Endotracheal intubation. Accessed on 26.11.2016. Available at: <http://www.healthline.com/health/endotracheal-intubation>
- Varsinais-Suomen Sairaanhoitopiiri. Updated 2015, Leikkauspäivän tapahtumat. Accessed 26.11.2016. Available at: <http://www.vsshp.fi/fi/hoito-ja-tutkimukset/leikkaukseen-valmistautuminen/Sivut/leikkauspaivan-tapahtumat.aspx>

Pictures:

Saeed, H.K. Published 2013. 2014 General anesthetics. Slide 46.

<http://www.slideshare.net/Pharmacologist/2014-general-anesthetics>

Urinary catheter

http://healthywa.wa.gov.au/Articles/U_Z/Your-indwelling-urinary-catheter

IV cannula

<http://www.osceskills.com/e-learning/subjects/intravenous-cannulation/>

Surgical drain

<http://scotdir.com/home/sciences-3/overview-of-surgical-drains>

Youtube Video:

IV cannulation procedure – OSCE Exam demonstration. Accessed on 8.12.2016. Available at:

<https://www.youtube.com/watch?v=0csywpTvHFM>