local anasthesia

sheet #7

refer to slide #4

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GA : general anesthesia it means reversible loss of consciousness

analgesia +- muscle relaxant ) some cases needs other don't)

slide #3

special sense : taste and hear ..etc

slide #5+6

surgery : traumatic and stressful causes so many changes on the body mainly in autonomic nervous system , leading to tachycardia a, HTN ..this is a disaster in special groups of people like those who go through IHD

anesthesia modulate these changes and bring it down as much as possible

slide #7 +8

hypnosis let the patient fall in sleep

not physiological sleep ( when we sleep daily at night)

this type suppress excitatory and stimulate inhibitory neurotransmitter like Gamma

it should be titrated according to the level of stimulus for example extraction of wisdom differ than other procedure

slide#9

opioid make analgesia it work on central and peripheral receptors , ideally it should not lead to loss of consciousness , but in some cases like extremes ages (elderly and youngs ) it can cause loss of consciousness

slide # 10

muscle relaxant doesn't affect smooth muscles

neuromuscular junction (between the nerve and the muscle )

we said +- muscle relaxant cause in certain cases we need them like when we need to facilitate the airway management in some cases there is alot of bleeding and salivation and i am worry about the airway

- to control ventilation in respiratory compromised patient

slide#11

we don't see these stages cause they are very rapid unless we give the drug slowly

in the excitement stage : the laryngopharynx reflexes still patent and work in this stage

slide # 12

in dentistry we can achieve anesthesia by local anesthesia like lidocaine , articaine ( the Na channel blocker )

but sedation and general anesthesia should be given by specialist not the dentist

sedation is the mildest form on analgesia

slide #13

dental procedure requiring GA

in case of restorative dental procedures : when there is bone removal , braking or crafting, it is very painful to be done under LA

- there is a group of patients even if other factors are not present they need general anesthesia; young children , mentally compromised patient .. etc

slide #14

you have to know the fasting times ( cause you will tell the patient when to fast )

why the patient have to fast? the main cause is the STOMACH we have airway reflexes which is coughing , sneezing ; when we vomit the vocal cord will close these are reflexes that prevent aspiration

when the patient is sleep we have no reflexes so if he weren't fasting whatever he eat he will aspirate it and this will lead to pneumonia , this is potentially fatal due to 3 reasons

pneumonia ' the acidity of the stomach is to low (ph =2)1-

)the epigastric juice usually is full of absorb lead to pneumonitis2-

)physical obstruction (anything you eat lead to obstruction )3-

so we till the patient to fast from midnight , if the patient can't fast from fluid for any reason we till him not to drink 2 hours before the procedure

\* clear fluid : mean anything you can see through it ( ex: tea , apple juice ):

slide #20

THIS DOESN'T MEAn that if THE patient comes to you and said that he doesn't fast you can give him to let his stomach empty

slide #21

special needs patient : mentally retarded patient or patient with syndromes

slide #23

special investigation : only if the patient is young or elderly or he is special need

\* INR international normalized ratio this replace PT(prothrombin time) and PTT(Partial thromboblastin time )

INR gather both them , it should be 1 , if it was higher than 1 you have to consider the risk of bleeding when ppl have cardiovascular accident ( CVA) or stroke they could be given warfarin to make the blood thin , on those patient INR between 2-3

that's why we do testing very 2-3 day to balance between thrombosis and bleedinG

you have to take consent from the patient or the patient's guardian , which is his father , the mother can't give consent (invalid ) except if the father is not present there should be legal guardian

slide #24

ASA :american society of anesthesiologist

it divide the people into groups regardless if they are young or old

only ASA 1& 2 can be done without investigation

-class 3 ( uncontrolled or severe )like uncontrolled HTN or diabetis like if the hba1c (التراكمي) more than 12

should be investigated before

slide #26

induction of anesthesia we have to induce sleep before, because muscle relaxant (paralysis) while the patient is awake feel like a hell

Slide #28,29,30

Securing the airway : in our procedures the pt have to be breathing spontaneously so that we use cuffed endotracheal tube , this cuff must be inserted in the trachea and we have to inflate it then it will create a good seal so that whatever saliva , blood , secretions or derbies that come out from the procedure won't go down to his lungs.

Slide #31

\* Incase of oral procedures we insert the tube from the nose to nasopharyngs to throat then the trachea .

\* incase of wisdom tooth extraction on one side you can but the tube on yhemk other side of the oral cavity or from the nose as we said before .

Slide #32

PPV ---> Positive pressure ventilator

A, B , C : airway , breathing , circulation .

\* necessary management incase of blood loss replacement , or incase of hypotension , or drugs to support cardiovascular system .

Slide #33

\*Loose teeth might fall during larengeoscopy ( procedure used to get the endotracheal tube in ) and obstruct the airway .

\*Use of throat pack -- to secure more and more we insert this throat pack which is gauze to the back of the throat to absorb any blood or secretions from the surgery.

Slide #34

\* After finishing the procedure we have to switch everything off and start waking the pt up , recovery must be in the lateral position so that whatever saliva or secretions will drool out , not in the supine position which will lead to airway obstruction . ( to protect the pt)

\* PACU ----> post anesthesia care unit , where we continue monitoring the pt .

\* assessment before discharge ( by anesthetists ) to make sure that the pt is ok before sending him home .

Slide #35

\*Sedation in case of wisdom extraction ---> anxiety

Slide #36

\*These risks come from the drugs that we use for sedation, that's why it has to be titrated according to the pt's age, weigh, smoking, history. .. etc. There is no standard for sedation ( one size dose not fits all :P)

Slide #38

\*Stages of sedation:

1- minimal sedation: still responsive to verbal stimulation

2- moderate sedation

3- deep sedation

4- general anaesthesia

\* we must keep the pt btw 2 & 3, if 3 goes over and above that the pt will enter GA phase

Slide #39

This table is important

Slide #42,43

Benzodiazepine: IV mainly, IM, orally

You can prescribe Benzodiazepine for the pt but he has to be escorted by somebody to the clinic , he must not take it and sleep bcz he might not wake up tongue emoticon

This drug may cause Amnesia , retrograde ( from the time of sedation and after) Some reports say that the pt may forget that he left home .

Slide #44

\*Diazepam ( valum) Long effecting time (may reach 30 hrs!) Diazepam is relatively safe .

Slide #46 & 47

Midazolam ( IV , IM ) conscious sedation that's what we're looking for, the pt under sedation but he can respond to verbal and tactical stimulation \*\* don't memorize the doses \*\*

There is very thin margin between deep sedation and GA

Slide #48 & 49

\*Temazepam Only oral

\*Benzodiazepine Doses: the dr said 10 mg for elderly 20 mg for children but I think it's the opposite !!

\*If u give the pt overdose then you must give him flumazenil .. If u give the pt long acting Benzodiazepine like valum (30 hrs) then u gave him flumazenil, this will reverse the rxn but it's short acting drug so the pt will wake up soon.

But if u left him, he'll enter sedation phase again that's why u have to continue the flumazenil as an infusion again .

\*\*Again u don't have to memorize the doses\*\*

Slide # 50 &51

the doctor didn't discuss them , but I don't know if they're included or not

Slide # 52-55

Nitrous oxide N2O It's not a Laughing gas !

Slide #55

\*N2O inorganic gas Can be used in concentration up to 70% ; people can live with 21% of oxygen gas so if give the pt 70% N2O : 30% O2 that's fine but u have to take care , also some pt might have hypoxic , decrease in respiration ( low O2 ) that's why the maximum N2O can be used is 50%:50% O2 That's called intenox used in dental and delivery procedures.

\*Scavenging system must be used in the clinic to remove excess N2O in the air otherwise all people in the clinic will sleep at the end of the day.

Slide #56

\*Interactions with other drugs; so that if the pt is on valum and u give him another type of Benzodiazepine he will enter deep sedation faster .

\*Sedation can be potentially fatal same as what happened with Dr Morey and Michael Jackson !

\*You can perform sedation to ur pt by yourself if u were trained enough but if u weren't don't risk , u properly need an anesthetist

Slide #61-66

No extra informations

**Good luck**