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Anesthesia Primer for patient care at Hospital Nacional de San Benito

By Eric Johnson, DO, January 2024.

Congratulations on your decision to go on an Aid Via Action Inc (AVA) short mission trip (SMT) to Hospital Nacional de San Benito (HNSB), in El Petén, Guatemala! And if you haven't actually decided yet, rest assured - you will. The combination of the mission of AVA, the location, and the people you'll be blessed to care for will make it a very easy decision that you won't regret!

Anesthetic care at HNSB is not going to be significantly different than your current practice. The medicine won't change; however, your adaptability and attitude will make a significant impact in your experience. First of all, remember that you're not in Kansas (or Texas) anymore. And I hate to say "when in Rome...", but when in Rome... That being said, everyone at HNSB wants to take excellent care of patients and will be happy to get you whatever you need if possible.



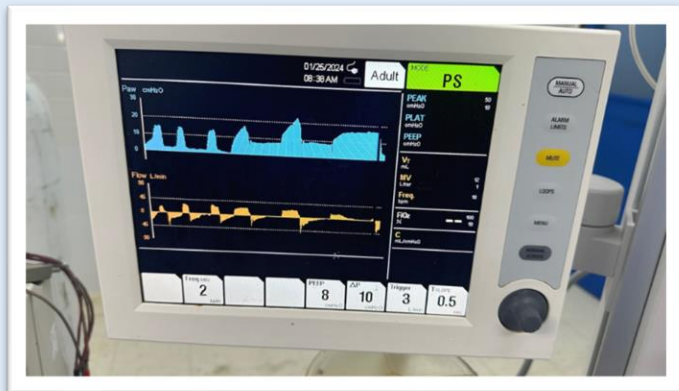
Before any anesthetics, make sure you have checked your machine to ensure you can deliver Positive Pressure Ventilation (PPV). There is wall oxygen,

but ensure your pipeline pressures are adequate on the machine (>40psi).



There are not auxiliary cylinders on the back of machine, but they do have large backup cylinders (H-tanks) that could be wheeled in for an emergency. Worst case scenario in a pipeline failure, you can hand-ventilate the patient with room air with an AMBU bag (remember that the vent is driven by O₂). The ventilator has several modes, but it is not straightforward how to select them. It will start out in 'Standby' - you can still flow oxygen and pre-oxygenate your patient in this mode. To start your pressure-time and volume-time graphs, press the auto/manual button on the top right. This should put the vent in 'Manual'. If you press it again, it will put the vent in default IPPV, so wait until the patient is asleep. The selection wheel (gray knob) can be used to select other modes of ventilation - including SIMV, VCV, PCV, and PSV. Just be sure to hit it twice (so it stops flashing) or it will default back to IPPV. To return the patient to spontaneous at the end of the case, hit the auto/manual button again to return the mode to 'Manual' and before you leave the room, turn your flows to 0 and put the vent in 'Standby' with the selection knob or else it will constantly alarm all throughout turnover. Remember that even though we have wall oxygen, it's a finite resource and should be conserved as much as possible. You can always play with these modes before you induce your first

patient so you are comfortable prior to anesthetizing.



Additionally, the vaporizers do not have any filler cap safety mechanisms. Double and triple check yourselves that you're putting sevo in the sevo vaporizer and iso in the iso vaporizer.

Make sure you have suction. Your suction will be shared with the surgical team, so just communicate if you need to use it during the surgery. You will probably only have a soft suction catheter (only saw Yankauers for the surgical field). Also, your patient will be on the table in the room before you arrive. Do not feel pressured to rush with your setup or any safety checks. You can take as much time as you need, and it's time to get to know your patient a bit (¿De donde eres? ¿Gustas chocolate?). Your monitor will be separate from the anesthesia machine. SpO2 and NIBP are the standard monitors, but you can ask for EKG stickers if needed. Your temperature monitor will more than likely be the back of your hand.

Ensure you have appropriate airway equipment available. HNSB has LMAs, ETTs of all sizes, and even a McGrath videolaryngoscope. If you use it, make sure you turn it off because once the battery runs out, it's useless. Patients will usually have a patent IV already started but may not have fluid hanging. Don't hesitate to ask (NS is 'salina'). Medications are located centrally in a large tackle box which is restocked daily. Take what you need in the morning, and if it's your practice to have meds readily available during your case, you can absolutely ask to have the box in your room. It usually lives in the Anesthesia room by

preop/PACU, so it's somewhat far from the ORs should you need something emergently. So, feel free to ask to have it in an OR so it's closer to all 3.



Medications will be in Spanish and may be unfamiliar from those used in the US. However, there is propofol, fentanyl, succinylcholine, epi, morphine, and neostigmine readily available. Notable exceptions are the lack of aminosteroid NMBs (who here has used atracurium? 🤔), glycopyrrolate, dexamethasone, and ondansetron. Also, most vials are non-standard dosages, so watch your concentrations (specifically - neostigmine 0.5mg/mL and powdered succinylcholine 500mg/vial). I gave some methylprednisolone for

PONV prophylaxis, reversed with neostigmine/atropine, and used atracurium for the first time. Most patients seemed rather sensitive to propofol (think 1-2mg/kg for induction) and opioids. Also, do not feel compelled to paralyze to 0/4 twitches. I mostly gave succinylcholine 100mg for induction and 15-25mg total of atracurium for initial surgical relaxation and redosing 10mg only if vent non-compliance.



Also, bring a nerve stimulator if you have one - they were not available at HNSB. Patient movement was usually quite responsive to increasing agent concentration or fentanyl, even during laparoscopy. Closures were very fast (no fascial closure and no subcuticular Monocryl for cosmesis), so I usually reversed, gas off/flows up, and started suctioning as soon as the gallbladder was out. As usual in anesthesia, preparation is the most important but the most logistically challenging part of the anesthetic. Make sure you are ready before starting. They won't start the surgery without anesthesia.



The largest departure from your current practice that you will notice is the lack of end-tidal gas monitoring. Confirmation of ETT placement is via clinical means - visualization, auscultation - but we did have 1-2 color-change detectors with us. Maintenance gas concentration and depth of

HOSPITAL DE SAN BENITO

ASA: 1-2-3-4-5- Emerg.

NOMBRE DEL PACIENTE: _____ SEXO: _____ FECHA: _____

EDAD: _____ AYUNO: _____

REGISTRO ANESTÉSICO

TIPO DE ANESTESIA: _____

ANESTESIOLOGO: _____ CIRUGIA PROGRAMADA: _____

TRONOTÓMICO PREOPERATORIO: _____ CIRUGIA REALIZADA: _____

TRONOTÓMICO POSTOPERATORIO: _____ AYUDANTES: _____

CIRUJANO: _____

SIGNOS VITALES AL INGRESO A QUIRÓFANO: TA: _____ FC: _____ FR: _____ TEMP: _____ SpO2: _____ OTROS: _____

TIEMPO	VENTILACIÓN	INCIDENTES	INTEUBACIÓN	HOJA#	TOF#	INGRESOS	EGRESOS	BALANCE
180								
170								
160								
150								
140								
130								
120								
110								
100								
90								
80								
70								
60								
50								
40								
30								
20								
10								

ALDRETE DEL PACIENTE AL SALIR DEL QUIRÓFANO: _____

ANESTESIA REGIONAL TIPO: _____ NIVEL DE PUNCIÓN: _____ CATERET: SI/NO _____

AGENTES ADMINISTRADOS: _____ INICIA CIRUGIA: _____ FIRMA DEL MÉDICO ANESTESIOLOGO: _____

ACTIVIDAD ANESTESIA: _____

RESPIRACIÓN: _____ TEMPERATURA ANESTESIA: _____ TEMPERATURA CIRUGIA: _____

CIRCULACIÓN: _____

CONCIENCIA: _____

SATURACIÓN: _____

TOTAL: _____

REMO ANESTÉSICO: _____

OBSERVACIONES: _____

anesthesia was 'determined' by markings in the vaporizer and hemodynamic monitoring. Aid Via

Action, Inc. (AVA) hopes to bring newer monitors with end-tidal gas capability to HNSB soon.

Intraoperative documentation is all on paper, so bring your pens. The anesthetic record is quite similar (but in Spanish; Buena suerte with the procedure names!).

Currently, monitoring in PACU is largely clinical. They have one monitor, but it will often be allocated to the sickest patient or maybe substituting in the OR if one of those malfunctions. You will want to bring your patient to PACU as stable as possible. Ensure adequate reversal, tidal volumes, level of consciousness, and stable hemodynamics before you leave the OR. Think Aldrete ~8 before taking them to PACU. It does not seem to be customary practice to give a full handoff to one particular nurse. All the nurses seemed to just watch out for everyone postop, but also that meant there didn't seem to be individual nurse responsibility for a postop patient. So just be aware and ensure stability prior to transfer of care. There was usually plenty of time for turnover if you've drawn up meds and prepared your airway equipment during the prior case.

GOOD LUCK!

Eric Johnson, D.O.
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Short Mission Trip Participant
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