DBS Protocol & Set up

I- Preop visit:

1- Arrange a meeting with patient and his or her family before the operation day

2- Website to read:

www.brainstimulation.net
www.georgetown.edu

II- Preparation:

A- Equipment:

1- A nice stretcher : with an IV pole, O2 tank slot
2- Portable monitor (ECG, BP, SaO2, CO2…)
3- Full O2 tank with O2 nasal cannula (roll up and use 4x4 to tie the tubing)
4- Mapleson circuit
   - 5.5 uncuffed ETT → attached to a nasal air-way (size: 28, 30 or 32 Fr, depending on Patient's size) from anesthesia workroom
   - Separate 3L bag from anesthesia workroom
   - Pink tape & tegaderms
   - 2% Lidocaine jelly
5- OR table :
   - 3 sets of straps
   - 2 side holder
   - U frame
   - Horse shoe
   - Blue Plastic tray
   - 1 inch tape
   - 2 blankets to pad side holders
   - Draw sheet (use as sling for patient's hands)
6- Shopping basket (from Dr. Tran's office):
   - Ambubag & mask
   - Airway: laryngoscope, ETT, stylet
   - Oral airway and nasal trumpet
   - lubricant → wrapped in blue towel
     - LMA 4 or 5, depending on patient size
   - Propofol infusion pump

- Extra 60cc syringe of Propofol
- Extra bag of Normosol
- Extra pulse-ox sticker (tab the ends)

7- Propofol
- 1 60cc syringe
- 2 x 20 cc syringes
- 5 small IV extensions with a 3-way stopcock for refilling propofol→ roll up and use 4x4 to tie the tubing

7- Scalp block tray :
- 1 kidney tray
- 3 x 10 cc syringes
- 3 x 25G , ⅝ inch needle (BD Eclipse→ with 1ml syringe)
- betadine or alcohol swabs (10)
- 6 4x4s

B- Medication:
- Glycopyrrolate 0.2mg IV given 30 minutes before going back to the OR
- Propofol : 100 cc vial → drawn up into 60cc syringe & 2 20-cc syringes
- Lidocaine 2% , 5cc bristojet OR 2cc syringe
- Bupivacaine 0.5 % with epi 1/200000, 30cc vial
- Ceftriaxone 2 grams OR Vancomycin 1 gram if PCN allergy
- Labetolol & Esmolol (for pinning)
- Emergency medications : Ephedrine, phenylephrine, atropine, Succinylcholine….

III- On the day of Operation :

A- Patient and family greeting

B- Check: consent, physical changes since last visit….

C- IV placement : on *left* hand preferable, secured if there is tremor

1- Glyopyrrolate 0.2mg IV in pre-op

2- Pulse-ox on same hand→ tab ends for easy removal

D- In the Operating room:

1- VS monitor with portable monitor
2- O2 nasal cannula @ 2 L/min (full O2 tank at bottom of stretcher)
3- Start lidocaine, Propofol infusion sedation @ 150 mcg/kg/min (60 cc syringe), bolus with a 20 cc syringe, as needed: maintain spontaneous respirations
4- Start Ceftriaxone 2 grams or Vancomycin 1 gram
5- Start scalp block (as shown in CD)
6- Secure Nasal trumpet with 5.5 uncuffed ETT with pink tape and tegaderms→ attach to Mapleson circuit for transport @ 10L/min
7- Dr. Kalhorn : hair cut, stereotactic frame placement
    - Patient may need a bolus of propofol during frame placement

E- Transfer patient to MRI

1- Place shopping basket underneath stretcher
2- Decrease Propofol infusion if possible
3- Arrange IV line, monitor cable properly for easy transfer and disconnection later …use 4x4s!

IV. – In MRI :

- REMOVE all MRI non compatible items in your pockets (stethoscope, beeper, ID, keys, earrings, watch…)
- Disconnect VS monitor cables, EKG leads, and pulse-ox sticker
- Disconnect Mapleson circuit from O2
- Transfer patient to MRI stretcher
- Move patient into MRI room : check your pockets again !!!
- **Attention:** Propofol infusion pump to be <u>outside</u> MRI room
    - tape IV tubing to floor over doorway to prevent occlusion
- Move patient to MRI table
- Connect MRI compatible monitor, O2 @ 10L/min

- IV bag on IV pole
- Dr. Kalhorn: head frame
- Observe airway, respirations (use high flows to be able to watch the Mapleson move)
- When you think patient is safe by himself or herself, you can leave the MRI room
- Continue to observe VS on 'slave monitor'
- At the conclusion of MRI:
    - Dr Kalhorn : undo head frame
    - Disconnect VS monitor, O2 supply
    - Roll the IV extensions and tie with a 4x4
    - Transfer patient to MRI stretcher
    - Move patient out of MRI room
    - Transfer patient back to regular stretcher
    - Connect O2 to Mapleson circuit @ 8-10L/min, VS monitor
    - Transfer patient back to OR

IV- Back to OR:

- OR table: like lounge chair position : reflex 30-45 degree, foot down, head up
- Transfer patient to OR table
- Connect O2, anesthesia machine monitors
- Foley catheter placement (lidocaine jel), more propofol sedation as needed
- U frame and plastic tray set up (pictures)
    1. Sling Patient's arms so hands are visible; use draw sheet; pad metal frame with blankets & lots of tape
    2. Use tegaderms to attach the blue drapes to the plastic tray
    3. Bair Hugger
    4. Cover the Patient's shoulders!

5. Place a tegaderm with the backing attached above the patient's head on the Ioband Drapes to shield the Patient's eyes from the bright light
6. Decrease Propfol gtt to 50 mcg/kg/min
7. Once patient is positioned and the drapes are up, take out Mapleson circuit and ETT
    a. Leave Nasal trumpet in place and remove once the patient is awake
    b. Place NC

- Precordial doppler (possibly)
- Water in cup with oral sponge and 3cc syringe

V- Dr. Kalhorn :

- Head frame placement
- Fluoroscopy machine
- Skin marking, 10x10 drape
- Skin prep
- Drapes
- Operation start.
    - Burr hole: watch for Venous Air Embolism (signs: decrease in ETCO2 and PaO2)
    - Maintain Systolic below 130 (Labetolol, esmolol) or Verapamil (5mg in 5cc)
    - STOP propofol infusion after burr hole
- Microelectrode placement
- Monitor with Dr Mandir
- Offer patient sips of water and wet their lips
- Sing Amazing Grace/What a Wonderful World!!! :)

VI – At the end of operation:

- Head dressing

- Drape removal
- Xray machine removal
- Transfer patient to ICU bed in lounge chair position
- To PACU with monitor as needed.
- Transfer care to PACU staffs