Ventriculo-Peritoneal Shunt (VPS), Placement

The human brain makes three quarters of a liter of water and reabsorbs it through drainage channels every day. If your brain's normal drainage channels are not working properly and water builds up in the brain, the water needs to be sent someplace else, so it does not build up in the brain (which would be very dangerous). This is when a little plastic tube (*VPS*) is used to let the water flow away from the brain and into a sack in the abdomen called the peritoneum. The peritoneum absorbs this fluid and gets rid of it. Therefore, a *ventriculo-peritoneal shunt* is a bypass of fluid from the ventricles of the brain to the peritoneum of the abdomen.

This drainage of fluid is necessary for many reasons. For example, a VPS shunt needs to be placed:

- In young infants who have a bleed or an abnormality in their brain (*Intraventricular Hemorrhage*).
- In young adults after certain kinds of brain bleeds (*Subarrachnoid Hemorrhage*).
- In young woman to prevent head aches and disturbance in their vision (*Pseudotumor Cerebry*).
- In the elderly who have normal pressure but are getting confused, cannot walk and are incontinent of urine (*Normal Pressure Hydrocephalous*).

LET YOUR CAREGIVER KNOW ABOUT:

- Recent infections
- Any foreign objects in your body from a previous surgery.
- Any recent fevers or illness.
- Past medical history (such as diabetes, seizer disorder or previous abdominal surgery)
- Allergies.
- Medications taken including herbs, eye drops, over-the-counter medications and creams.
- Use of steroids (by mouth or creams).
- Past problems with anesthetics.
- Possibility of pregnancy (if this applies).
- History of blood clots (*Deep Vein Thrombosis*).
- History of bleeding or blood problems.
- Past surgery.
- Other health problems.
- If you are experiencing a changes in your vision
- If you are suffering from nausea
- If you have any recent unset of headaches

RISKS AND COMPLICATIONS OF THE PROCEDURE:

- Bleeding (a large bleed in the brain is not very common but can cause a great deal of damage).
- Infection.
- Injury to the structures in the neck, chest, abdomen or bowel.
- Hernia at the incision site in the belly (*abdomen*).
- Shunt malfunction or blockage. Infection is a common cause of a shunt not working.

BEFORE THE PROCEDURE

- You will be given a medicine to help you sleep (*general anesthetic*), and a breathing tube will be placed.
- You will be given a medicine to kill germs (*antibiotics*) to keep the infection rate down.
- Your head, neck, chest and abdomen will be cleaned.
- Before surgery, about half your head is shaved in the area where the shunt will be inserted.

PROCEDURE

- Once you are sleeping, a small whole is drilled in the skull for a plastic tube to be placed into one of the pockets of fluid (*cerebrospinal fluid*) called the ventricles. This tube is small.
- A small incision is then made over the belly. Another plastic tube is passed under the skin of the head, neck and chest. It is then passed through a hole into the belly.
- The two tube are connected to a plastic chamber that allows the surgeons to control the flow of water from the brain to the belly with a remote control. These are called programmable shunts.

AFTER THE PROCEDURE

- You will most likely spend 24-48 hours in the hospital. During this time your caregivers will look for any

signs of complications from the procedure.

- You will get 24 hours of antibiotics.
- Once you start passing gas from below, your caregiver will allow you to eat.
- Once you have started eating, walking, urinating (*voiding*) and having bowel movements on your own and are without headaches, nausea or vomiting, your caregiver will discharge you home.

HOME CARE INSTRUCTIONS

- For two weeks, **do not** soak the incision site under water. Swimming and baths should be avoided. Showers are ok, but rinse off the incision sites.
- **Do not** over exert yourself as you system needs time to adjust to the VPS.
- Many of these programmable shunts are sensitive to magnets. Therefore, if you have a programmable shunt and need an MRI, it is very important that you go to your surgeon to reprogram your shunt IMMEDIATELY.

SEEK IMMEDIATE MEDICAL CARE IF:

- There is any drainage from the incision site.
- The incision site starts to get red.
- The incision site opens up.
- Your symptoms return (because the shunt may have gotten obstructed and may not be working).
- In an adult, the signs and symptoms of shunt malfunction include:
  - Headaches.
  - Nausea and throwing up (*vomiting*).
  - Fevers.
  - Swelling along the shunt track.
  - Trouble with vision.
- In an infant, signs and symptoms of shunt malfunction include:
  - Swollen or raised soft spot.
  - Fussiness, irritability or a high-pitched cry.
  - Feeding problems.
  - In very young babies, the head may even get bigger.

Document Released: 11/30/2006 Document Re-Released: 10/15/2010
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