

Intraperitoneal Fluids, after Water PowerPoint

An apologetic for the use of IP fluids

During the late 1970's exploratory surgery was done routinely for abdominal trauma. The vast majority of these surgeries had negative results. It was during this time, before the days of CT scanning, that the use of IP fluids came into its own. Starting about 1981, IP fluids were used to diagnose abdominal bleeding, to decrease the numbers of negative exploratory surgeries. A liter of IV fluid was run into the abdomen, sloshed around a bit, and then run back out. If it came out clear, there was no bleeding. If it came out pink or red, then surgery was warranted. The procedure was reasonably sensitive and specific. The problem arose in getting the fluid back out. Trauma patients frequently had low blood volumes due to bleeding, if not in the abdomen, then elsewhere. The IV fluids were rapidly absorbed into the blood stream. This was advantageous for the patient, though it was inconvenient for the ER doctor who wanted to make a diagnosis. The procedure was soon abandoned because CT scanning came into its own. However, it was used for long enough to prove safe. It was also effective, not for diagnosis, but for treatment of impending shock and, by extension, for dehydration.

Using homemade fluids

Materials:

Sterile set¹: Heavy scissors
Gauze: 4 pieces
A napkin with a hole cut in the center
2cc syringe with a fine needle such as 25-27 gauge
A bottle of lidocaine

Drop on top after opening first layer:

Sterile IV tubing
Large syringe, sterile
Large gauge needle, 13-18g, sterile
Either a butterfly needle, or angiocatheter, 16-20 gauge, new, sterile

[Exam gloves plus soap and water] or sterile gloves

Tape

Iodine or another antiseptic solution

Lidocaine

Fluids: sterile, homemade half-teaspoon pickling salt per liter of water

Tape

Procedure:

1. Open the sterile set, outer layer
2. Put on your sterile gloves or else the exam gloves followed by washing.
3. Have someone open the package of IV tubing, dropping it onto the sterile set.
4. Use the sterile heavy scissors to cut off the drip chamber from the IV tubing.

¹ Double wrapped and sterilized

5. Have someone open the sterile, large syringe package; take it out. Put the large gauge needle onto the syringe; put the cut end of the IV tubing up onto the large gauge needle; tape it in place.
6. Take the plunger out of the syringe; lay it in a sterile location.
7. Have someone fill the syringe with sterile homemade fluid, running it through the IV tubing to eliminate air. Then close the flow regulator. Have an assistant hold the syringe up high.
8. Clean the navel and surrounding area well with iodine solution
9. Put the cloth with the hole over the navel.
10. Draw up the lidocaine into the 2 cc syringe with the fine needle.
11. Pierce the south pole of the navel with the fine needle, directing the needle toward the rectum. Inject lidocaine as you go in and also as you withdraw.
12. Have someone drop the butterfly needle or angiocatheter onto your sterile set.
13. Put the butterfly needle into the south pole rim of the navel, directing it toward the rectum.
14. As soon as the bevel hole is entirely underneath the skin surface, attach the IV tubing and open the flow valve. The fluid will flow slowly and the abdominal wall will swell as you push the butterfly needle farther in. As soon as the needle is in the peritoneum, the fluid will flow faster and the abdominal wall will swell no more.
15. Run in 20 ml/kg fast and then stop the flow. Raise the head of the bed and wait for the abdominal distension to decrease, then run in 10 ml/kg every hour or two until the total amount is run in or the patient wakes up and starts drinking.

Using commercial IV fluid

Materials:

- Sterile gloves or washed exam gloves
- Sterile gauze
- Iodine solution
- 2 ml syringe with a fine needle
- Lidocaine 1% or 2%
- 1 liter IV fluid—normal saline or lactated ringer's solution
- IV tubing
- A butterfly needle

Procedure:

1. Put on your exam gloves and wash them well, or put on the sterile gloves.
2. Take a piece of gauze from the set, have someone pour iodine on it.
3. Wash the navel area 3 times, 3 pieces of gauze, 3 iodine pours, discarding each piece.
4. Draw lidocaine into the small syringe, fine needle, and anesthetize the south pole of the navel, deep, as far as the needle will go, aiming for the rectum or a bit above.

5. Attach the IV tubing to the bag of IV fluid and run fluid through the tubing to eliminate air; close the flow valve.
6. Pierce the south pole of the navel with the butterfly needle, heading for the patient's rectum or a little above that.
7. As soon as the bevel of the needle is entirely under the skin, attach the butterfly needle to the IV tubing, and open the valve on the tubing.
8. Advance your needle until the IV fluid flows quickly; then tape it in place.
9. Run in 20 ml/kg fast and then stop the flow. Raise the head of the bed and wait for the abdominal distension to decrease, then run in 10 ml/kg every hour or two until the total amount is run in or the patient wakes up and starts drinking.