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PROCEDURAL ARTICLE

The occasional abdominal paracentesis

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INTRODUCTION

Once in a while, there is fluid in the abdomen. Usually, it is ascites from cirrhosis, heart failure or malignancy; it could even be infected. Which is it? (Imaging won't tell you.) A tap could make the diagnosis clear.[1] Can you make your patient more comfortable by draining most of it? Of course you can.[2]

EQUIPMENT

- Portable Ultrasound with abdominal probe and gel
- Surgical skin prep such as Proviodine
- 5cc syringe and needles for anaesthetising the tract
- Xylocaine 1%
- Sterile drapes and gown
- #14-gauge IV cannula
- Three-way stop cock
- Sample tubes (typically for cells chemistry and cytology)
- Suction tubing and body of 10cc syringe as an adapter
- Wall suction with drainage carousel or evacuated vacuum containers

PROCEDURE

I was trained to do the procedure without imaging.

1. Position the patient on their side. I go lateral to the rectus on the dependent side to avoid injury to the hypogastric artery. Avoid any scarred areas that might have adherent bowel
2. Mark the level of shifting dullness and go dependent to there. These days, I use an ultrasound, as a quick application of the probe will find a deep pocket of ascites for you clear of any vulnerable structure [Figure 1]. I'm old school, so after finding my spot, I mark it on the patient in pen. When doing the procedure, I can watch my hands and the patient, and not the screen. Some practitioners are agile enough to do the job two-handed, when watching the screen, with a sterile ultrasound probe cover (e.g., a sterile glove palm) in one hand and the needle in the other. Use the technique that you are comfortable with
3. Prep a generous area around the mark and drape the patient with sterile drapes
4. Using a small needle raise a skin bleb with 0.5 ml xylocaine [Figure 2]
5. Attach the syringe containing residual 5–10 ml xylocaine to a three-way stop cock and the back end of a 14-gauge intravenous (IV) cannula, infiltrating as you go [Figure 3]

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6. Advance the needle slowly into the abdominal cavity alternately injecting local anaesthetic and applying slight suction. I place my finger along the needle to control the insertion [Figure 4]
7. When ascites fluid is aspirated, withdraw the steel needle and syringe from the cannula and replace the stopcock and syringe to draw samples (if desired). The arm of the stopcock always points to the port that is turned off. Note the colour and turbidity of the liquid. If turbid, infection or malignancy may be suspect. If diagnosis is the aim, samples can be drawn for cell count (purple top tube), protein and other chemistries (red top tube), cytology (formalin) and microbiology (usually a sterile urine container)
8. Attach the suction tubing to the unused port on the stopcock. Standard wall suction tubing can be attached to a Luer lock connector with the body of a 10cc syringe [Figure 5]
9. Attach to wall suction and set on regulated low-to-medium suction [Figure 6]. The catheter can be easily displaced when waiting for the fluid to drain. Be careful not to withdraw all the fluids as this might drop the blood pressure.

COMPLICATIONS

Over a few decades of rural medical practice, I have encountered common complications of blocked needle, kinked needle, needle that gets pulled out and similar incidents that require replacement of the catheter. Occasionally, I have had a persistent fluid leak that may require a purse string closure and pressure dressing. I have never had a patient go hypotensive or bleed, but

Figure 1: Ultrasound showing large pocket of fluid in black under the probe

Figure 2: Freezing the skin

Figure 3: The cannula stopcock syringe assembly

Figure 4: Tapping

Figure 5: Capped adapter

Figure 6: Suction collection

if that occurs, I would treat with IV saline and potentially albumin. Bleeding from the abdominal wall can be controlled with a figure-of-eight suture. Intra-abdominal bleeding would require laparotomy.

CONCLUSION

Abdominocentesis can be easily done by the rural generalist physician to provide relief or diagnosis for your patient.

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