

Diagnostic Abdominal Paracentesis

Indications: diagnosis of cause of new ascites; diagnose spontaneous bacterial peritonitis or other infections (e.g. abdominal TB); diagnose blood in peritoneal space in trauma

Relative contraindications: coagulopathy (INR >1.4, platelets <50, oral anticoagulant <24 hours, clopidogrel <7days); pregnancy; distended bowel (obstruction/ileus); organomegaly; distended bladder

Introduction

- **W**ash hands, **I**ntroduce self, **P**atients name & DOB & wrist band, **E**xplain procedure and get **w**ritten consent
 - Risks: pain; bleeding; infection; damage to local structures (including bowel perforation); paracentesis leak
 - Ask patient to empty their bladder prior to procedure
- ****Check patients clotting screen, platelet count and if they have been on an oral anticoagulant/clopidogrel****
- Ensure assistant is available
- Examine patient and tap out ascites
- Use ultrasound to confirm the presence/location of ascites, check the depth of the abdominal wall and mark the spot pre-procedure (although, if there is tense ascites with fluid thrill, it is usually safe to proceed without ultrasound)

Preparation part

- Wash hands and apply apron
- Clean a trolley
- Gather equipment onto bottom of trolley (think through what you need in order)
 - Sterile pack
 - Cleansing snap-sponge x2 (iodine or alcohol/chlorhexidine)
 - *OPTIONAL:* Sterile drape with hole in centre (or 2-3 drapes without holes in)
 - 10ml syringe and 3 needles (1 orange 25G, 2 green 21G) for local anaesthetic
 - 20ml syringe and green 21G needle for aspirating ascitic fluid
 - Cotton gauze swabs (used whenever needed throughout procedure to dry/clean sterile area)
 - Sterile dressing
 - Equipment to be kept outside of the sterile field
 - Sterile gloves
 - 10ml 1% lidocaine (maximum 3mg/kg – note 1ml 1% lidocaine = 10mg)
 - Bottles: 3-4 white-topped sample collection bottles, purple top haematology tube, yellow top biochemistry tube
- Walk to patient
- Wash hands
- Open sterile pack to form a sterile field on the top of the trolley
- Open packets (without touching the instruments themselves) and drop sterile instruments neatly into the sterile field
- Pick up waste bag from sterile pack without touching anything else and stick to side of trolley

Patient part

Positioning and exposure

- Position patient lying supine in bed with head of bed elevated (aids fluid accumulation in lower abdomen)
- Expose patient's abdomen

If the insertion point has not already been marked using ultrasound...

- Locate insertion point:
 - Traditionally in the right iliac fossa (approximately 5cm above and up to 5cm medial to the right ASIS)
 - Tap out ascites and confirm flank dullness at intended insertion point
- Use different site if there is overlying infection
- Mark insertion point with a skin pen/indentation

Preparation

- Wash hands
- Apply sterile gloves using sterile technique (open pack on a side surface)
- Sterilize area
 - Work from middle outwards in one spiral motion (using cleansing snap-sponge)
 - Repeat with second cleansing snap-sponge
 - *Discard used snap-sponges as they are no longer sterile, but note all equipment used after this (including all needles) can be returned to the sterile field after use*
 - *OPTIONAL:* Apply the sterile drape over the patient's body so that the hole is in the correct place to allow access to the insertion site (or apply 2-3 drapes centred around exposed insertion site if no holes)
- Anaesthetise tract
 - Ask assistant to snap open lidocaine bottle and hold open upside-down

- Draw up lidocaine using 1st green needle on 10 ml syringe and expel any air
- Change to the orange needle and insert at an acute angle to form a single subcutaneous bleb around insertion site in order to anaesthetise the skin
- Change to the 2nd green needle and insert perpendicular to the skin to anaesthetise the insertion tract
 - This is done by instilling lidocaine in small increments of increasing depth
 - Always aspirate when advancing the needle (so you know when you get to the peritoneal cavity) and aspirate before injecting lidocaine (to check you are not in a vessel)
 - When fluid is aspirated, remove needle and do not advance further
- Wait 1 minute to work

Paracentesis

- Attach new green needle to the 20ml syringe
- Insert perpendicular to the skin into the same tract, aspirating during infiltration
- When fluid is aspirated, stop advancing and remove 20ml of ascitic fluid
- Remove needle

Finally

- Dress wound

To complete

- Thank patient and cover them
- Bin waste and gloves, dispose of sharps safely, clean trolley and wash hands
- Decant ascitic fluid into sample tubes, label them and send to lab
 - White sample tubes x3-4
 - MC&S x2 → microbiology
 - Protein and glucose → biochemistry
 - Cytology (if required) → histopathology
 - Biochemistry/haematology tubes
 - Yellow SST top (albumin) → biochemistry
 - Purple EDTA top (cell count) → haematology
- Perform venepuncture to determine concurrent blood glucose and albumin level
- Fully document procedure in patients notes