

# Therapeutic Abdominal Paracentesis

**Indications:** large volume ascites causing respiratory compromise or abdominal pain/pressure

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

## Introduction

- Wash hands, Introduce self, Patients name & DOB & wrist band, Explain procedure and get written consent
  - Risks: pain; bleeding; infection (peritonitis); 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 surgical hat and mask
- 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)
  - 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
  - *IF NEED SAMPLES:* 50ml syringe
  - Needle drain kit (can use suprapubic catheter set) – *equipment included in kits varies*
    - Scalpel
    - Catheter with needle
    - 20ml syringe
    - Catheter adaptor with 3-way tap/clamp
    - Drainage bag/bottles and tubing (can use catheter bag)
  - Cotton gauze swabs (used whenever needed throughout procedure to dry/clean sterile area)
  - Sterile dressing to secure catheter e.g. cannula dressing
  - Equipment to be kept outside of the sterile field
    - Chlorhexidine hand scrub solution
    - Sterile theatre gown
    - Sterile surgical gloves
    - 10ml 1% lidocaine (maximum 3mg/kg – note 1ml 1% lidocaine = 10mg)
- 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 using Chlorhexidine solution, then apply sterile gown and gloves using the [surgical scrub technique](#)
- 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*
- 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 1<sup>st</sup> 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 2<sup>nd</sup> 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
- Now **wait 1 minute** for the anaesthetic to work, while you prepare the equipment and put in order:
  1. Scalpel: remove cap
  2. Needle: remove bung (if present) and attach 20ml syringe
  3. Catheter: straighten curved tip of catheter using its sheath, insert needle into catheter and then remove catheter sheath
  4. Catheter adaptor: clamp it or close 3-way tap

#### Paracentesis

- Make a 2mm scalpel incision through the anaesthetised skin
- Insert needle perpendicular to the skin into the same tract, aspirating during infiltration
- When fluid is aspirated, advance 5mm further to ensure the tip of the catheter enters the peritoneal cavity (not just the tip of the needle)
- Holding the needle still, advance the catheter off the end of the needle until the flange touches the skin
- Remove needle
- IF SAMPLES ARE REQUIRED: attach 50ml syringe to the catheter and aspirate 50ml for samples
- Attach catheter adaptor to end of catheter
- Attach drainage bag/bottle connection tubing to catheter adaptor and unclamp/open adaptor

#### Finally

- Dress catheter and secure tubing

#### To complete

- Confirm it works
- Thank patient and cover them
- Decant and send ascitic fluid samples if collected
- Bin waste and gloves, dispose of sharps safely, clean trolley and wash hands
- Fluid replacement: give **100ml 20% human albumin solution following every 2L ascites** drained in cirrhotic patients; otherwise determine need for crystalloid fluids clinically
- Drainage rate: free drainage of up to 5L over first 4 hours, then up to 1L/h (if hypotensive – limit to 0.5L/h throughout)
- Fully document procedure in patients notes
- Other notes
  - Drain can be left in for **up to 6 hours** (risk of infection if left longer, especially for cirrhotic patients)
  - If ascitic fluid is still draining through tract after removal, attach stoma bag