Standard Operational Procedure

Drainage of Malignant Ascites (Abdominal Paracentesis)

Background
Cancers that involve the peritoneum can cause fluid to build up within the abdominal cavity. This is most common in ovarian cancer but can also occur in other cancers such as pancreatic or colorectal cancers. It may also occur with peritoneal deposits from cancers such as melanoma.

Ascites may be asymptomatic but if of sufficient volume can cause troublesome symptoms such as abdominal discomfort, pain, nausea, anorexia, or constipation.

When the cancer responds to treatment such as chemotherapy the fluid will generally resolve. However in the absence of effective treatment the fluid will continue to build up causing increasing symptoms.

Although diuretics are often prescribed for ascites there is little evidence of benefit. The most direct and immediate way to relieve the symptoms from ascites is to remove the fluid by undertaking percutaneous drainage using a cannula or a drainage catheter. This is known as abdominal paracentesis.

Indications for practice (Patient Selection)
Drainage of ascites is appropriate for patients with ascites due to malignancy where the ascites is causing significant symptoms which are not controlled by simpler treatments e.g. antiemetics.

Drainage of ascites may also be undertaken to establish a diagnosis.

This SOP does not apply to ascites due to other causes e.g. liver disease.

Contraindications
Bleeding risk: Patients on warfarin should be told to discontinue their warfarin 3 days before the procedure and the INR should be <1.5 prior to the procedure.

Thrombocytopenia: procedure should not be done if platelets < 50.

Abdominal skin infection.

Pre-treatment assessment
- Symptom assessment - to confirm the patient has significant symptoms that could be due to ascites (see above). Asymptomatic ascites does not need to be drained.
- Drug history – to ensure patient is not on anti-coagulants.
- Physical examination to confirm presence of abdominal fluid and to identify a suitable drain site. Particular reference to abdominal distension, shifting dullness, ‘percussion thrill’, abdominal masses and abdominal tenderness.
• Drainage in the flanks is most suitable. The site should show shifting dullness, be non-tender and away from palpable abdominal masses or organ enlargement.

• When there is doubt about the presence of ascites or a suitable drainage site then abdominal ultrasound should be requested with the radiologist asked to mark a suitable drainage site.

• Baseline pulse, BP and temperature.

• Check FBC if thrombocytopenia possible e.g. recent chemotherapy, recent bleed.

Documentation

• History, examination and discussion with the patient should be noted.

• Standard evaluation forms are available (attached).

Equipment and materials

A range of techniques are described. The Bonnano catheter is recommended as being simple, easy to insert, easy to fix in place and generally comfortable for the patient.

• Lidocaine 1% 10mls (or 2% if not available)

• Range of needles (Orange needle, Blue needle, Green needle)

• Alcohol-based skin cleaner/antiseptic

• 10 ml syringe x 2

• Small blade

• Bonnano supra pubic catheter pack (14 gauge)

• Sterile gloves

• Dressing pack

• Adhesive tape

• Incontinence pad

• Drainage collection bag (catheter bag).

Procedure for drain insertion

• Explain procedure to patient and address any concerns or questions.

• Ask patient to empty their bladder, if possible.

• Record pre-procedure observations.

• Patient to lie flat (one pillow),

• Procedure commenced using aseptic technique including hand wash using the six step technique and use of sterile gloves.

• Skin widely around insertion site cleaned with alcohol-based skin antiseptic.

• Skin at the insertion site infiltrated with lidocaine using orange needle then deeper tissues using blue and green needle; pulling back at each infiltration to insure no intravascular infiltration. Aspiration of fluid indicates the needle is in the peritoneal cavity and will indicate the depth of subcutaneous tissue.

• Particular attention should be given to infiltrating at the peritoneum where resistance may be felt.

• The insertion site is enlarged using the sterile blade to allow ease of insertion of the catheter.
• Syringe is attached to the catheter which is inserted with slight negative pressure. When ascetic fluid is aspirated the puncture needle is removed whilst drainage catheter is advanced.

• If no ascites is aspirated on advancing the catheter then the catheter/needle should be removed and the patient reassessed. If successful drainage is not achieved at one site then a second attempt may be made at another site (usually the other side).

• When drainage catheter is in place, drainage bag to be attached.

• Catheter secured in place using adhesive tape.

**During drainage**

• Ascitic fluid may be allowed to drain freely.

• If the patient has symptoms or signs suggesting fall in BP such as dizziness or otherwise becomes unwell, the drainage should be stopped, BP should be checked and medical staff informed.

• Patient to remain on bed thought the procedure but should be encouraged to change positions from time to time (lying flat, lying on each side, sitting up) to be accompanied to toilet.

• Record volume of ascites drained with bag emptied as required.

• BP and Temp to be recorded according to patient condition.

**Post-drainage**

• Once drainage has slowed or stopped then drain may be removed i.e. less than 100 mls in an hour. Leaving the drain in unnecessarily can raise the risk of pain or infection

• Patient to lie flat on the bed.

• Remove adhesive tape.

• Remove drain by pulling it in a direction perpendicular to the skin (straight out)

• Apply dry dressing at drain site.

• Patient may be discharged after 30 minutes if they feel well.
Abdominal Paracentesis
Patient Assessment Form 2.2

<table>
<thead>
<tr>
<th>D No</th>
<th>Name</th>
<th>DoB</th>
<th>Date:</th>
<th>Time:</th>
</tr>
</thead>
</table>

Previous Drainage ...... Yes / No
Date of last drain...................................................

### Current Symptoms

<table>
<thead>
<tr>
<th>Symptom</th>
<th>None</th>
<th>Mild</th>
<th>Moderate</th>
<th>Severe</th>
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</thead>
<tbody>
<tr>
<td>Breathlessness</td>
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<tr>
<td>Abdominal distension</td>
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<tr>
<td>Abdominal discomfort</td>
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<tr>
<td>Nausea</td>
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<td>Vomiting</td>
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<tr>
<td>Anorexia</td>
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<tr>
<td>Constipation</td>
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</tbody>
</table>

Does the patient have significant symptoms due to ascites?      Yes / No

### Drug History

<table>
<thead>
<tr>
<th>Drug</th>
<th>No</th>
<th>Yes</th>
<th>Note</th>
</tr>
</thead>
<tbody>
<tr>
<td>Patient on warfarin</td>
<td></td>
<td></td>
<td>Check INR &lt; 1.5</td>
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<tr>
<td>Patient on heparin</td>
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<td></td>
<td>Seek medical advice</td>
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</tbody>
</table>

### Physical Examination

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Value</th>
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</thead>
<tbody>
<tr>
<td>BP</td>
<td></td>
</tr>
<tr>
<td>Pulse</td>
<td></td>
</tr>
</tbody>
</table>

Abdominal examination
(indicate drain site)

### Comment on drain insertion

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Name: ..................................................................................................................................................................................

Signed...............................................................................................................................................................................

Designation........................................................................................................................................................................
Abdominal Paracentesis
Patient Assessment Form 2.2

Pre-procedure

Date: ...................................... Pulse: ...................... BP: ......................
Time: ...................................... Temp: ...................... O2 sats: ......................

Monitoring during drainage

<table>
<thead>
<tr>
<th>Time drainage started:</th>
<th>Nature of fluid:</th>
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</thead>
<tbody>
<tr>
<td>Time</td>
<td>Volume – Running Total</td>
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<tr>
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</table>

Time drain removed
Once drainage has slowed or stopped i.e. less than 100 mls in an hour, the drain should be removed.
Leaving the drain in unnecessarily can raise the risk of pain or infection

Post- procedure

Date: ...................................... Pulse: ...................... BP: ......................
Time: ...................................... Temp: ...................... O2 sats: ......................

Other Notes

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Name: ............................................................
Signed:................................................................
Designation:...................................................

Symptoms at 1 week

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<thead>
<tr>
<th></th>
<th>None</th>
<th>Mild</th>
<th>Moderate</th>
<th>Severe</th>
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<tbody>
<tr>
<td>Breathlessness</td>
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Has draining their ascites made them feel better? Y/N