

**STANDARDIZED PROCEDURE**  
**PERITONEAL PARACENTESIS (Adult, Peds)**

**I. Definition**

Peritoneal paracentesis is a surgical puncture of the peritoneal cavity for aspiration of ascites. The term ascites denotes the pathologic accumulation of fluid in the peritoneal cavity. The presence of ascitic fluid is indicated by abdominal distention, shifting dullness, and occasionally a palpable fluid wave.

**II. Background Information**

**A. Setting:** The setting (inpatient vs outpatient) and population (adults vs pediatrics) for the Advanced Health Practitioner (AHP) is determined by the approval of the privileges requested on the AHP Privilege Request Form. If the procedure is being done on a Pediatric patient, make sure Child Life is involved and use age appropriate language and age appropriate developmental needs with care of children, as appropriate to the situation.

**B. Supervision:** The necessity of this procedure will be determined by the Advanced Health Practitioner in collaboration with the supervising physician or his/her designee. Designee is defined as another attending physician who works directly with the supervising physician and is authorized to supervise the Advanced Health Practitioner.

Direct supervision will not be necessary once competency is determined, as provided for in the protocol. The Advanced Health Practitioner will notify the physician immediately upon being involved in any emergency or resuscitative events or under the following circumstances:

1. Patient decompensation or intolerance to the procedure
2. Bleeding that is not resolved
3. Outcome of the procedure other than expected

**C. Indications:**

1. To determine the cause of ascites.
2. To determine if intra-abdominal bleeding is present or if a viscous has ruptured.
3. For therapeutic removal of fluid when distension is pronounced or there is associated respiratory distress.

**D. Contraindications:**

1. Marked bowel distention (correct distension first, using NG suction or rectal tube decompression).
2. Previous abdominal surgery (scar near proposed insertion site).
3. Severe thrombocytopenia (platelet count < 50,000).

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4. Clotting abnormalities: Prothrombin time or partial thromboplastin time prolongation of >1.5 times control (relative contraindication; correct these abnormalities first)

**III. Materials**

Chlorexadine solution

1% lidocaine

3ml syringe with 25-27 gauge needle and 21 gauge 1 1/2" needle

18-20 gauge 1 1/2 " angiocath

20-60 ml syringe

Blood transfer tubing or prepared paracentesis tray if available.

Stopcock

Evacuated containers

Sterile drape

**IV. Peritoneal Paracentesis Procedure**

**A. Pretreatment Evaluation**

1. History of malignancy (malignant ascites). Inquire about prior liver disease and portal hypertension. Ethanol consumption, tattoos, IV drug use, history of viral hepatitis or jaundice.

Signs and Symptoms: The history usually is one of abdominal pain that is diffuse, constant and occurs in association with increasing abdominal girth due to accumulation of ascites. May also have respiratory distress secondary to increasing size of abdominal girth. History of malignancy with weight loss (malignant ascites). Fevers (infectious peritonitis).

2. Patient Evaluation: General appearance, vital signs, fevers, pulse oximetry.

Physical Examination: The most sensitive means for determining whether ascitic fluid is present is to test for "shifting dullness." In general, patients must have at least 1500 mL of fluid to be detected reliably by this method. In many cases it may be difficult to distinguish between obesity and small-volume ascites.

Assess for lymph nodes, specifically in the supraclavicular region or umbilicus, which may suggest intra-abdominal malignancy. Assess for signs of portal hypertension and chronic liver disease including elevated jugular venous distension, hepatomegaly, presence of large abdominal wall veins that flow away from the umbilicus, splenomegaly. Widespread anasarca may be due to cardiac failure or nephritic syndrome with hypoalbuminemia.

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Palmar erythema, cutaneous spider angiomas, gynecomastia, and muscle wasting suggest chronic liver disease.

3. Diagnostics: CBC with differential, total protein, albumin, LFTs. Creatinine, lytes, blood cultures as clinically indicated. CT may assist in detecting thrombosis in the hepatic or portal veins, lymphadenopathy, masses in the mesentery, and masses of the solid organs (liver, ovaries, and pancreas).

**B. Procedure**

1. Explain the purpose, risks, benefits and steps of the procedure.
  - a. Risks include perforation or laceration of abdominal/pelvic viscera, bleeding, infection, leak of ascitic fluid
  - b. Benefit includes relief of pain and yielding information, which may be useful in diagnosis and /or signifying of altering treatment
2. Obtain informed consent from the patient or appropriate legal designee.
3. Check platelet count and/or presence of coagulopathy. Consult with attending physician if platelet count is <50,000, or there is a known coagulopathy as to whether platelet transfusion or other intervention is needed prior to the procedure.
4. The patient does not need to restrict food or fluids.
5. Explain that he/she will receive a local anesthetic to alleviate pain during the procedure.
6. Check patient history for hypersensitivity to the local anesthetic.
7. Assemble materials and prepare sterile field
8. Have patient empty the bladder (insertion of a Foley catheter is not recommended but may be necessary in some patients).
9. Place the patient supine at the edge of the bed (right side of the bed if you are right handed), with the trunk elevated 45 degrees. Perform a time out with all appropriate steps.
10. Access to the peritoneal space is usually midline 3 to 4 cm below the umbilicus, halfway between the symphysis pubis and the umbilicus. Alternatively, the entry site can be in the left or right lower quadrant between the umbilicus and the anterior superior iliac spine or the patient's flank, depending on the location of the fluid as determined by percussion of fluid wave. Be sure to avoid old surgical scars since the bowel may be adherent to the abdominal wall.
11. Arrange equipment on a sterile field on a bedside stand.
12. Prep and drape the patient appropriately. Observe sterile technique.
13. Select the paracentesis site in the midline or lower quadrant.

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14. Anesthetize the skin over the insertion site with 1% lidocaine using a 3 ml syringe and a 25 or 27 gauge needle. Change to a 22 gauge needle, then anesthetize down to and including the peritoneum.
15. Attach a 18-20 gauge 1½ inch needle (angiocath) to a 20-60 ml syringe. (In markedly obese patients a 3½ inch 20 or 22 gauge spinal needle may be needed).
16. With the catheter mounted to the syringe, puncture the anesthetized skin. Keeping the needle perpendicular to the abdominal wall, advance the needle slowly until fluid flows freely into the syringe. You will meet some resistance as you enter the fascia. While advancing the syringe, maintain constant, gentle suction. When you get return of fluid, leave the catheter in place, remove the needle, and begin to aspirate, using a vacuum bottle. Sometimes it is necessary to reposition the catheter because of abutting bowel.
17. For diagnostic paracentesis, collect 50 ml of ascitic fluid.
18. For a therapeutic tap, do not remove more than 500 ml in ten minutes. One liter is the maximum that should be removed at one time; this volume permits the fluids and electrolytes to equilibrate.
19. When enough fluid has been withdrawn, quickly withdraw the catheter. Cover the insertion site with a sterile pressure dressing. If leakage of ascitic fluid occurs, close the paracentesis with a mattress stitch.
20. Specimen handling: Fill the tubes completely with pleural fluid. Dispose of the needles, then gloves.
21. Check that each tube is properly labeled.
22. Depending on the clinical picture, send samples for cell count and differential, total protein, specific gravity, albumin, LDH, glucose and amylase, AFB stain, Gram's stain, fungal stain, and bacterial and fungal cultures. If neoplasm is suspected, consider sending carcino-embryonic antigen (CEA) level and cytological evaluation (requires up to 1 L in cytology bottle)

**C. Post Procedure**

1. Observe patient for 30 minutes for signs/symptoms of hypotension, bleeding, or abdominal distress.
2. Provide post-procedural analgesics as needed.

**D. Follow-up treatment**

Instruct patient and family to observe sight for signs and symptoms of infection and to call MD on-call or clinic for any unusual problems.

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**V. Documentation**

**A. Documentation is in the electronic medical record**

1. Documentation of the pretreatment evaluation and any abnormal physical findings.
2. Record the time out, indication for the procedure, procedure, type and size of needle or catheter used, EBL, Amount of fluid removed, Specimens to laboratory, the outcome, how the patient tolerated the procedure, medications (drug, dose, route, & time) given, complications, and the plan in the note, as well as any teaching and discharge instructions.

**B. All abnormal/adverse effects are reviewed with an attending physician**

**VI. Competency Assessment**

**A. Initial Competence**

1. The Advanced Health Practitioner will be instructed on the efficacy and the indications of this therapy and demonstrate understanding of such.
2. The Advanced Health Practitioner will demonstrate knowledge of the following:
  - a. Medical indication and contraindications of peritoneal paracentesis
  - b. Risks and benefits of the procedure
  - c. Related anatomy and physiology
  - d. Consent process (if applicable)
  - e. Steps in performing the procedure
  - f. Documentation of the procedure
  - g. Ability to interpret results and implications in management.
3. Advanced Health Practitioner will observe the supervising physician perform each procedure three times and perform the procedure **three** times under direct supervision.
4. Supervising physician will document Advanced Health Practitioner's competency prior to performing procedure without direct supervision.
5. The Advanced Health Practitioner will ensure the completion of competency sign-off documents and provide a copy for filing in their personnel file and a copy to the medical staff office for their credentialing file.

**B. Continued proficiency**

1. The Advanced Health Practitioner will demonstrate competence by successful completion of the initial competency.

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2. Each candidate will be initially proctored and signed off by an attending physician. Advanced Health Practitioner must perform this procedure at least **three** times per year. In cases where this minimum is not met, the attending, must again sign off the procedure for the Advanced Health Practitioner. The Advanced Health Practitioner will be signed off after demonstrating 100% accuracy in completing the procedure.
3. Demonstration of continued proficiency shall be monitored through the annual evaluation.
4. A clinical practice outcomes log is to be submitted with each renewal of credentials. It will include the number of procedures performed per year and any adverse outcomes. If an adverse outcome occurred, a copy of the procedure note will be submitted.

**VII. RESPONSIBILITY**

Questions about this procedure should be directed to the Chief Nursing and Patient Care Services Officer at 353-4380.

**VIII. HISTORY OF POLICY**

Revised Sept 2012 by Subcommittee of the Committee for Interdisciplinary Practice

Reviewed Sept 2012 by the Committee on Interdisciplinary Practice

Prior revision October 2008

Approved Sept 2012 by the Executive Medical Board and the Governance Advisory Council.

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