Ultrasound-Guided Aspiration of Fluid Collection: Paracentesis and Thoracentesis

About your procedure

What is an ultrasound-guided aspiration?

An ultrasound scan uses sound waves to take pictures of your body’s organs and tissues.

An aspiration is the removal of fluid from a part of your body. If the fluid is in your belly, the procedure is called paracentesis. If it is in your chest cavity, it is called thoracentesis. These procedures may be done to bring you relief from your symptoms, to examine the fluid in the lab, or for both reasons. A needle or catheter (a thin, flexible tube) is the easiest way to remove this fluid safely from your body.

How does the procedure work?

Ultrasound sends sound waves into your body using a transducer, a hand-held device that sends and receives sound waves. After gel is applied to your skin, the sonographer (ultrasound technologist) presses the transducer against your skin. As the sound waves reflect back from your body’s fluids and tissues, a picture of your tissues is created on a monitor.

With ultrasound guidance, a needle or catheter is inserted through your skin directly into the fluid. You must hold still during the insertion. The insertion itself usually only takes a few seconds or minutes. The aspiration may take several minutes or up to an hour or longer, depending on the amount of fluid being taken out and the reason for the procedure.
How should I prepare for the scan?
- You will be asked to change into a hospital gown for your exam. All of your belongings will stay with you during your visit.
- Eat lightly on the day of your procedure.
- Take your regular medicines as prescribed by your doctor, unless your doctor or the radiology clinic staff has told you otherwise.
- If you normally take aspirin or another anticoagulant medicine (blood thinners), follow the instructions for not taking it that the Imaging Services scheduling staff gave you. They have checked with our clinic doctors about whether you should stop taking the blood thinners before your biopsy.
- You may be asked to arrive early if your doctor has determined that you need an infusion of albumin for your paracentesis. Albumin is a protein that helps balance fluid levels in your body. It is sometimes needed or recommended to prevent side effects of removing large amounts of fluid from your body. Imaging Services scheduling staff will give you instructions if you need albumin.
- If you will have a lot of fluid taken, you will not be able to drive yourself home after your exam. Your health care provider will tell you if you will need to bring someone to drive you home.

How is the ultrasound-guided aspiration done?
- The sonographer will help place you on the ultrasound table. You will either lie down or sit during the procedure, depending on where the fluid to be collected is and other factors.
- The first few scans will show your doctor the area that will be aspirated and the safest place to insert the needle or catheter.
- Once this location is confirmed:
  - The insertion site will be marked on your skin.
  - Your skin around the insertion site will be scrubbed and disinfected, and a sterile drape will be put over it.
  - A local anesthetic will be injected. This will numb the path of the needle or catheter.
  - Then, a small incision will be made in your skin. The needle or catheter will be inserted through this incision.
- You will be asked not to move or cough while the needle or catheter is being inserted. You may also need to hold still at times during the procedure. You may also be asked to hold your breath at different times. Holding still will ensure that the needle is being inserted safely into the right area.
• Using the ultrasound image for guidance, your doctor will direct the needle or catheter to the correct site and remove the fluid. After enough fluid is taken, the needle or catheter will be removed.

• After any bleeding at the incision site has stopped, a bandage will be placed over your incision. Bleeding will be minor and you will not need stitches. It is very rare to have bleeding that requires a hospital stay and further treatment.

• If you have a lot of fluid to be removed at a time, it can build up again and you may need to repeat the procedure in the near future.

• If a thoracentesis is done, we may order a chest X-ray after your procedure to make sure you do not have any complications, such as pneumothorax (collapse of the lung). This is a rare, but important complication to know about. Pneumothorax usually does not require treatment. But, sometimes pneumothorax requires placement of a drain and time to monitor you before you leave the hospital.

• Most patients may leave the hospital after their procedure.

What will I feel during the procedure?

When you receive the local anesthetic to numb your skin, you will feel a slight pin prick from the needle. You may feel a burning sensation as the medicine is injected and takes effect. The area will become numb in a short time.

You may feel pressure from your doctor’s hands or from the needle or catheter itself.

If a larger amount of fluid is being removed from your chest cavity (thoracentesis), you may start to cough. If this happens, we will pause or stop the procedure.

If larger amounts of fluid are being removed from your belly (paracentesis), you may feel some relief from the pressure and weight the fluid was causing. You may also feel a little dizzy after a paracentesis. To lessen these complications, you may receive an infusion of albumin to help balance fluids in your body.

What should I expect after the procedure?

• Most times, you may remove your bandage the day after your procedure.

• You may bathe or shower as normal the day after your procedure.

• Do not do heavy physical exercise such as heavy lifting, a lot of stair climbing, or sports activities the night of your fluid aspiration and for 1 full day afterward.
Questions?

Your questions are important. Call your doctor or health care provider if you have questions or concerns. Clinic staff are also available to help.

- UWMC Imaging Services: 206-598-7200
- Harborview Radiology: 206-744-3105

- Two days after your aspiration, you may return to your normal activities if you feel up to it.
- Talk with your radiologist if you plan to travel by air within 24 hours after your procedure.
- Your needle site may be sore as the local anesthesia wears off. It should start to feel better 12 to 48 hours after your procedure.

When to Call for Help

Severe bleeding from an aspiration is rare. It occurs in less than 3% (3 out of 100) of patients. Some symptoms that might be signs of bleeding are:

- Pain where the aspiration was done
- Rapid pulse (heart rate)
- Overall weakness
- Pale skin
- Chest pain or shortness of breath, especially after a thoracentesis

If you have any of these symptoms, go to the nearest emergency room or call 9-1-1. Call your doctor as soon as possible after you have received emergency treatment.

Who interprets the results and how do I get them?

The radiologist will send a detailed report to your doctor who referred you for your aspiration. It may take a few days to a week, or more, for your doctor to get all of your lab results. These results will include what was found from studying the cells in the fluid that was collected. This is called the pathology report. Your referring doctor or nurse will discuss these results with you.

What else do I need to know?

The radiologist who does your procedure, or an assistant, will explain this procedure to you. They will describe the technique and possible complications, and will give you instructions and self-care tips for after your procedure. Be sure to ask all the questions you may have. You will need to sign a consent form that says you understand what you talked about and that you agree to have this procedure.