### Ultrasound Guided Thoracostomy Tube Placement

<table>
<thead>
<tr>
<th>Pre procedure imaging requirements</th>
<th>• Any of the following: CXR, Cross sectional imaging, or ultrasonography. Procedure should be approved by the attending body interventional radiologist.</th>
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</thead>
<tbody>
<tr>
<td>Indications</td>
<td>• Pleural effusion causing shortness of breath, unable to wean from the ventilator</td>
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<tr>
<td>Relative Contraindications</td>
<td>• Coagulopathy</td>
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</tbody>
</table>
| Potential risks                   | • Hemorrhage  
• Death  
• Pneumothorax  
• Pulmonary laceration                                                                 |
| Room Requirements                 | • Frequently done at bedside with portable ultrasound                                                                            |
| Tray Setup                        | • 5 French Centesis needle, 7 cm  
• Dilators 8,10,12, or up to size of drainage catheter.  
• 12 French Catheter  
• Rosen .035 curved guidewire  
• Scapel  
• 2-0 braided silk suture  
• 2 Barrier sheets, package of sterile towels, 2 sterile gowns  
• (2) 12 cc syringes, (1) 60 cc syringe  
• 22 g, (1) 18 g, (1) 25 g Needles  
• 2 packages of 4 x 4's  
• Betadine solution for prep  
• Lidocaine 1 % without epinepherine  
• Sodium Bicarbonate  
• Ureteral Connecting Tubing  
• Pleuravac  
• Covaderm |
| Patient positioning               | • Patient should be in the lateral position with the affected side up.                                                          |
| Pre-op                            | • Review imaging  
• Labs (INR and platelets)  
• Coags INR < 1.5, Plts > 50K  
• Review patient allergies  
• Review patient medications (ie coumadin, plavix, heparin)  
• NPO x 6 hours if administering conscious sedation  
• Order from referring physician for procedure  
• Order from referring physician for laboratory analysis of fluid |
| Sedation                          | • Fentanyl, morphine, versed as directed by attending Radiologist                                                                |
| Consents                          | • Thoracentesis with possible chest tube placement  
• Conscious sedation                                                        |
| Procedure                         | • Patient is placed in the lateral position with the affected side up. Ultrasound imaging should be obtained immediately prior to prepping site. Lidocaine is infiltrated down to the pleural surface, aspirating prior to injecting. Pleural fluid often is aspirated.  
• A small dermatomy is then made, followed by blunt dissection.  
• The centesis needle is then advanced into the pleural space. Fluid should be freely aspirated.  
• The guidewire is then placed through the centesis catheter, ensuring ample wire is within the pleural space. |
- The tract is then serially dilated up to size of drainage catheter being placed.
- The drainage catheter is then placed by advancing the catheter with stiffner in place until sideholes are no longer seen, then the catheter is expressed off.
- After obtaining a sample, the catheter is attached to the ureteral connecting tubing and the pleuravac.
- A suture is then placed for stabilization and a sterile dressing is applied.

| Post procedure orders | • CXR  
|                       | • For floor patients, VS q 15 min x 2 then q 30 min x 2, then routine.  
|                       | • If patient is in unit, there are already nursing orders on chart.  
|                       | • Tube placed to wall suction.  
|                       | • Record all drainage.  
|                       | • If effusion is loculated or has incomplete drainage then TPA may be administered through the tube.  
|                       | • Advance diet to previous orders. |

| Specimen | • Fluid should be labeled with patient name, medical record number, source of fluid, and obtained by radiology. Orders should be placed on chart for appropriate studies and a copy of the orders should be taken to the lab with the specimen. |

| Follow up | • CXR, cultures, cytology |