Thoracentesis and Chest Tube Management in Critical Care Medicine
A Multicenter Survey of Current Practices

Nicolas Mongardon, MD; Benjamin Tremey, MD; Jean Marty, MD, PhD

e-Appendix

ACTIVITY

Q1) What kind of hospital do you work in?
   □ Teaching hospital
   □ Non teaching hospital
   □ Military hospital
   □ Private hospital

In which unit?
   □ Medical and surgical ICU
   □ Surgical ICU
   □ Medical ICU

Q2) How many beds are there?
   ___ beds

How many patients did you admit in 2005?
   ___ admissions

Q3) How long has been your professional experience as a senior?
   ___ years

Q4) How many chest tubes do you personally insert a year?
   ___ a year

Q5) How many chest tubes have been inserted in your unit in 2007?
   ___ chest tubes
Q6) What is the main reason for chest tube insertion in your unit?
   □ Spontaneous pneumothorax
   □ Pleural effusion
   □ Hemothorax

CONFIRMING SITE OF DRAIN INSERTION

Q7) Do you have access to an ultrasound machine in your unit?
   □ Yes
   □ No

Q8) To confirm the site of puncture and drain insertion before pneumothorax drainage, do you use:
   - CT-scan
      □ Always
      □ Often
      □ Sometimes
      □ Rarely
      □ Never
   - Ultrasonography
      □ Always
      □ Often
      □ Sometimes
      □ Rarely
      □ Never

Q9) To confirm the site of puncture and drain insertion before pleural effusion drainage, do you use:
   - CT-scan
      □ Always
      □ Often
      □ Sometimes
      □ Rarely
      □ Never
   - Ultrasonography
      □ Always
      □ Often
      □ Sometimes
      □ Rarely
      □ Never
Q10) To confirm the site puncture and drain insertion before hemothorax or post-traumatic pneumothorax drainage, do you use:
- CT-scan
  □ Always
  □ Often
  □ Sometimes
  □ Rarely
  □ Never
- Ultrasonography
  □ Always
  □ Often
  □ Sometimes
  □ Rarely
  □ Never

**ANALGESIA-SEDATION**

Q11) In a patient without mechanical ventilation, do you associate an infiltration of local anaesthetic?
  □ Always
  □ Often
  □ Sometimes
  □ Rarely
  □ Never

Q12) In a conscious patient (Ramsay score 2-3) with mechanical ventilation, do you associate local anaesthesia?
  □ Always
  □ Often
  □ Sometimes
  □ Rarely
  □ Never

Q13) In a patient without mechanical ventilation, do you anticipate the chest tube insertion with premedication or sedation?
  □ Always
  □ Often
  □ Sometimes
  □ Rarely
  □ Never
Which one do you use?
- Atropine
- Hydroxyzine
- Midazolam
- Level I or II analgesics
- Opioids
- Ketamine
- Propofol

Q14) In a conscious patient (Ramsay score 2-3) with mechanical ventilation, do you associate local anaesthesia?
- Always
- Often
- Sometimes
- Rarely
- Never

Which one do you use?
- Atropine
- Hydroxyzine
- Midazolam
- Level I or II analgesics
- Opioids
- Ketamine
- Propofol

INSERTION PROCESS

Q15) Do you specifically give prophylactic antibiotics for chest tube insertion in trauma cases?
- Always
- Often
- Sometimes
- Rarely
- Never

Q16) Which hemostasis and coagulation parameters do you request, without life-threatening conditions?
- Prothrombin time: ___ %
- Platelet count: ___/mm³
Q17) To evacuate following effusions, which size of chest tube do you usually use?

<table>
<thead>
<tr>
<th>Effusion Type</th>
<th>Indwelling small lumen catheter</th>
<th>Small bore chest tube ≤14Fr</th>
<th>Large bore chest tube &gt; 16Fr</th>
</tr>
</thead>
<tbody>
<tr>
<td>Spontaneous pneumothorax</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-traumatic pleural effusion</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hemothorax or post-traumatic pneumothorax</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q18) Do you perform suctioning of the pleural space with needle and syringe before pneumothorax drainage?

- □ Always
- □ Often
- □ Sometimes
- □ Rarely
- □ Never

Q19) Do you perform suctioning of the pleural space with needle and syringe before pleural effusion drainage?

- □ Always
- □ Often
- □ Sometimes
- □ Rarely
- □ Never
Q20) Do you perform suctioning of the pleural space with needle and syringe before traumatic pneumothorax drainage?
- □ Always
- □ Often
- □ Sometimes
- □ Rarely
- □ Never

Q21) How do you dissect chest wall?

<table>
<thead>
<tr>
<th></th>
<th>Finger</th>
<th>Curved hemostat/clamp</th>
<th>Trocar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Always</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Often</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sometimes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rarely</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Q22) How do you penetrate the pleura?

<table>
<thead>
<tr>
<th></th>
<th>Finger</th>
<th>Curved hemostat/clamp</th>
<th>Trocar</th>
</tr>
</thead>
<tbody>
<tr>
<td>Always</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Often</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sometimes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rarely</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

CHEST TUBE REMOVAL

Q23) Do you give analgesics at the time of the removal?
- □ Always
- □ Often
- □ Sometimes
- □ Rarely
- □ Never

Q24) What do you use for skin closure after tube removal?
- □ « purse string » suture
- □ « mattress » suture
- □ nothing
RECOMMENDATIONS

Q25) Have you ever read the recommendations entitled “BTS guidelines for the insertion of a chest drain”, published by the British Thoracic Society in Thorax in 2003?

☐ Yes
☐ No