



The Quiet Chest in Trauma

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Take Home Points

- **The chest should be quiet in trauma.**
- **CPR will not help in an acute traumatic arrest and may delay important interventions such as ultrasound, finger thoracostomy and thoracotomy.**
- **Needle decompression is better performed in the 4th or 5th intercostal space.**
- **A bougie can be used as a placeholder after finger thoracostomy prior to chest tube placement.**

- **Hicks has a philosophy that the chest “should be quiet” in trauma.**
- **What does this mean?** For example, he was often directed to place a chest tube or perform a thoracotomy incision while someone was performing CPR. This is dangerous and problematic. He previously nicked his finger under those circumstances.
- **The chest is a busy place, especially for such a relevant area in terms of injury in sick trauma patients.** We need to be better at leaving it alone and exploring it in a way that will allow us to make meaningful management decisions and interventions.
- **CPR.** Unless there is a trauma arrest with a strong medical component, CPR is not helping. If the patient was shot in the chest multiple times and all of their blood is in the thorax, CPR will not do any good. It will prevent ultrasound. It will get in the way of finger thoracostomy and thoracotomy. It will get in the way of diagnosing and managing the injuries we care about. Hicks will often stop CPR on arrival of the trauma room. It can't get in the way of other interventions that you deem more important. You need to frame your priorities. You need to do three things; make sure the airway is controlled, do an ultrasound and do a finger thoracostomy. This will answer your questions regarding what to do next.
 - **This is a paradigm shift.** For example, Dan Howes MD, an intensivist was discussing the resuscitation of a bad GI bleed. If you are alone and in a resource limited setting and the patient arrests, should you do CPR or place a central line and start blood? Do the latter. This is the same concept. If you have no circulating volume, pushing on the heart won't help. If you have an obstructive form of shock due to trauma, CPR won't help. CPR is effective for sick hearts that aren't beating well.
 - **There is a counterargument that trauma patients with an arrest may be low flow with a low blood pressure.**

- CPR isn't just push but also pull. Changes in intrathoracic pressure when the chest compression is released may draw blood into the heart.
- **Needle decompression.**
 - **The second intercostal space in the midclavicular line is hard to find.** If you are wrong and too low, you may end up in the cardiac box. Nobody wants to cannulate the aortic arch.
 - Laan, DV et al. **Chest wall thickness and decompression failure: a systematic review and meta-analysis comparing anatomic locations in needle thoracostomy.** 2016 Apr;47(4):797:804.[PMID: 26724173](#)
 - This study found failure rates were highest and the chest wall thickness was highest at the second intercostal space. The catheter is more likely to be misplaced, be too short or kink in this position compared to the 4th or 5th intercostal space at the anterior axillary or mid-axillary line. You are more likely to have success at this space.
 - You can try to circumvent this by using a longer catheter, but longer catheters are more likely to result in complications.
 - **Hicks would never say never to needle decompression.** He could envision a situation where something needs to be done quickly to address a suspected tension pneumothorax in the chest. In this situation, the catheter may be the best option.
 - **If you are going to do it, it should be performed in the 4th or 5th intercostal space.**
- **Needle decompression is not optimal.** If you place it and get nothing, what does it mean? Does that mean that there wasn't a tension pneumothorax? There was a pneumothorax but it wasn't under tension? The catheter isn't in the right place? You don't know. **A finger thoracostomy lets you know for sure and you can diagnose other pathology such as haemothorax.**
- **If the patient has difficult anatomy and you are worried you are going to lose your track for chest tube placement, you can use a Bougie as a placeholder.**
- **Hicks is increasingly convinced that the real value of ultrasound in trauma is in thoracic rather than abdominal evaluation.** In seconds, you can evaluate for lung sliding and haemothorax. This can assist in your decision to intervene. Cardiac ultrasound is more likely to result in an actionable management decision. If you have a sick trauma patient with penetrating thoracic trauma and your ultrasound shows pericardial fluid, it will influence everything you do next.