

**J Spec Oper Med. 2013 Winter;13(4):53-8.**

**Needle thoracentesis decompression: observations from postmortem computed tomography and autopsy.**

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**Background:** Needle thoracentesis decompression (NTD) is a recommended emergency treatment for tension pneumothorax. Current doctrine recognizes two suitable sites: the second intercostal space in the midclavicular line and the fourth or fifth intercostal space in the anterior axillary line.

**Methods:** A review was conducted of postmortem computed tomography and autopsy results in 16 cases where NTD was performed as an emergency procedure.

**Results:** In 16 cases with 23 attempted procedures, the outcome was confirmed in 17 attempts. In 7 placements, the catheter was in the pleural cavity; in 7 placements, the catheter never entered the pleural cavity; and in 3 placements, cavity penetration was verified at autopsy even though the catheter was no longer in the cavity. Success was noted in 6 of 13 anterior attempts and 4 of 4 lateral attempts, for an overall success rate of 59% (10 of 17). In the remaining 6 attempted procedures, a catheter was noted in the soft tissue on imaging; however, presence or absence of pleural cavity penetration was equivocal. All placements were attempted in the combat environment; no information is available about specifically where or by whom.

**Conclusion:** NTD via a lateral approach was more successful than that via an anterior approach, although it was used in fewer cases. This supports the revision of the Tactical Combat Casualty Care Guidelines specifying the lateral approach as an alternative to an anterior approach.