



# Pneumothorax



Dræn eller ikke ??????

# Danny's flail



# FARLIGT !

231 PHC deaths following penetrating chest trauma

19 %

Pneumothorax

Tensionpneumothorax

Hemothorax

As only plausible injury related to death

**Lerer LB et al**

**Preventable mortality following sharp penetrating chest trauma**

**J Trauma 1994;37:9-12**

# Symptomer

## Vågne dyr

### Respiratory

- Increasing respiratory rate
- Increasing tidal volume
- Contralateral
  - increasingly negative IPP excursions
  - increasing chest wall expansion

### Cardiac

- Tachycardia

## Vågne mennesker

### Universal findings

- Chest pain
- Respiratory distress

### Common findings (50%–75% cases)

- Tachycardia
- Ipsilateral decreased air entry

### Inconsistent findings (<25% of cases)

- Low SpO<sub>2</sub>
- Tracheal deviation
- Hypotension

### Rare findings (about 10% cases)

- Cyanosis
- Hyper-resonance
- Decreasing level of consciousness
- Ipsilateral chest
  - Hyper-expansion
  - Hypo-mobility
- Acute epigastric pain
- Cardiac apical displacement
- Sternal resonance

### REVIEW

## Tension pneumothorax—time for a re-think?

S Leigh-Smith, T Harris

# Tension PTX hos IPPV patienter

## Universal findings

- Rapid onset
- Immediate and progressive decrease in arterial and mixed venous SpO<sub>2</sub>
- Immediate reduction in cardiac output +/- BP

## Common findings (each in about 33% of cases)

- High ventilation pressures
- Ipsilateral chest:
  - Hyper-expansion
  - Hypomobility
  - Decreased air entry

## Inconsistent findings (each in about 20% of cases)

- Surgical emphysema
- Venous distension

**VIGTIGT !!!!**

# Mistanken hos vågne

## Box 7 Recommendations for immediate chest decompression in awake patients with tension pneumothorax as the suspected cause

Chest radiograph not immediately available and:

- SpO<sub>2</sub> < 92% on O<sub>2</sub>
- Systolic BP < 90 mm Hg
- Respiratory rate < 10
- Decreased level of consciousness on O<sub>2</sub>
- Cardiac arrest
  - bilateral finger or tube thoracostomy
  - not needle thoracocentesis

Hvor gør det ondt ?

Koncentrer dig - hvor gør det ellers ondt ?

Føles din vejrtrækning normal ?

**VIGTIGT !!!!**



# Thorax dimensions

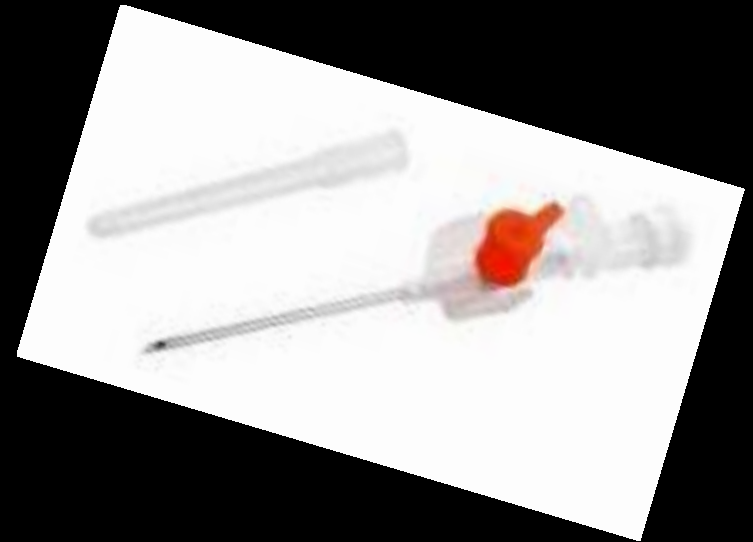
110 patienter – age 43 yrs

CT scan

Chest wall :      4.5 cm (mean) R  
                         4.1 cm (mean) L

55 % > 4.5 cm !!

(Orange cannula = 4.5 cm !!!)



**Prehosp Emerg Care. 2009 Jan-Mar;13(1):14-7.**

**Needle thoracostomy for tension pneumothorax: failure predicted by chest computed tomography.**

**[Stevens RL](#), [Rochester AA](#), [Busko J](#), [Blackwell T](#), [Schwartz D](#), [Argenta A](#), [Sing RF](#).**



# MÅ det gøres – JA !

624 patients

76 chest tubes

Pre-hospital physicians

15 non- therapeutic

56 therapeutic

6 missed indications !!!!!

NO infections

NO prophylactic antibiotics

J Trauma. 1998 Jan;44(1):98-101.

Chest tube decompression of blunt chest injuries by physicians in the field: effectiveness and complications.

[Schmidt U](#), [Stalp M](#), [Gerich T](#), [Blauth M](#), [Maull KI](#), [Tscherne H](#).

# Tubes....

91 chest tubes  
65 no-tube  
thoracostomies

31 % (28) poorly  
positioned

17 % (15) repositioning



**Ann R Coll Surg Engl. 2008 Jan;90(1):54-7.  
Pre-hospital and in-hospital thoracostomy: indications and  
complications.**

**[Aylwin CJ](#), [Brohi K](#), [Davies GD](#), [Walsh MS](#).**

# Trouble

## Needle decompression failure:

- Obstruction by:
  - blood
  - tissue
  - kinking
- Missing a localised tension pneumothorax
- Inability to drain a large air leak
- Requirement for repeated needle decompression



## Complications to chest drain:

- Death
- Haemorrhage (most commonly intercostal artery damage)
- Bronchopleural fistula
- Subcutaneous tube placement
- Intraperitoneal tube placement
- Infection
- Damage to
  - Lung parenchyma
  - Mediastinal contents
  - Neurovascular bundles
- Myocardium

# Thoracostomy



Rapid  
Effective

Chest decompression

# Forskelle

## DRÆN

Kinking  
Clotting  
Malposition  
Re-position

Tid - !!!!

Fæste

Træning / Rutine

Sikkert drænage !!

## IKKE DRÆN

Hud-flap (Fedt !)  
(især HKP sidevæg)

Raskt

Re-check er enkelt

Vi må derfor spørge os selv :

Hvornår har jeg sidst lagt et  
thoraxdæn ??

Op til den enkelte læge at holde sig up-to-date !

Sandheden ligger et sted i mellem !



...men nærmest thoracostomi.....





