

Why

RUSH?

Justin Bowra

RUSH? ACES? FALLS? BLUE?

They're all fine

Any PoCUS assessment that helps diagnosis...

...and involves more than one system / organ...

... in a critically ill patient

The RUSH Exam 2012: Rapid Ultrasound in Shock in the Evaluation of the Critically Ill Patient

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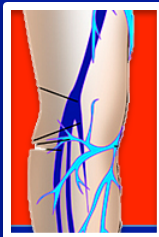
KEYWORDS

- Rapid ultrasound in shock examination • RUSH exam
- Shock • Ultrasound

'Rapid Ultrasound in Shock'



The Pump



The Tank



The Pipes

But it's not just for shock

Arrested
Breathless
Shocked

Arrested patient

CPR is in progress

Pulseless

Not in VF / VT

What's the clinical question?

1. Is there a reversible cause?
2. Is the ETT in the right place?

1. Is there a reversible cause?

Tension PTX

Tamponade

Toxins

Thrombosis (MI)

Thromboembolism (PE)

Hypovolaemia

Hypothermia

Hypoglycaemia

Hyperkalaemia

Hydrogen (acidosis)

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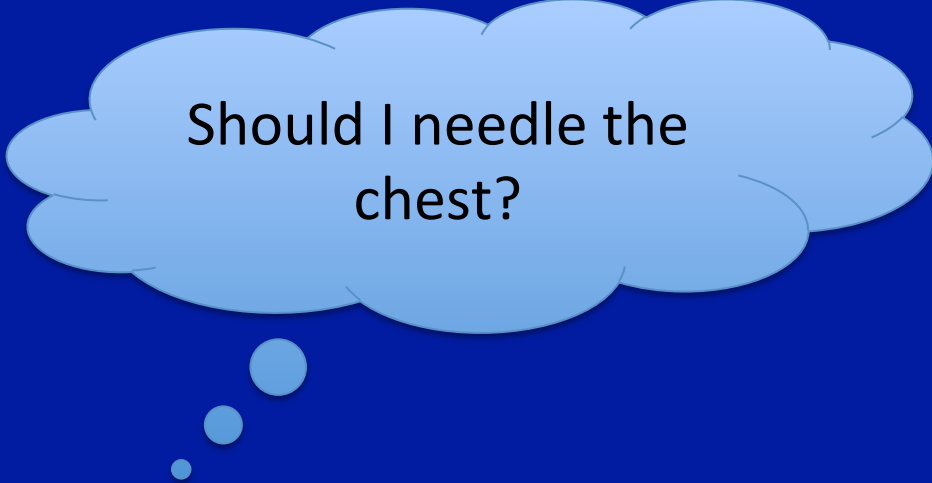
Tension PTX
Tamponade

Hypovolaemia

Thromboembolism (PE)

Tension PTX


Absent lung sliding on one side?



Should I needle the chest?

Tamponade

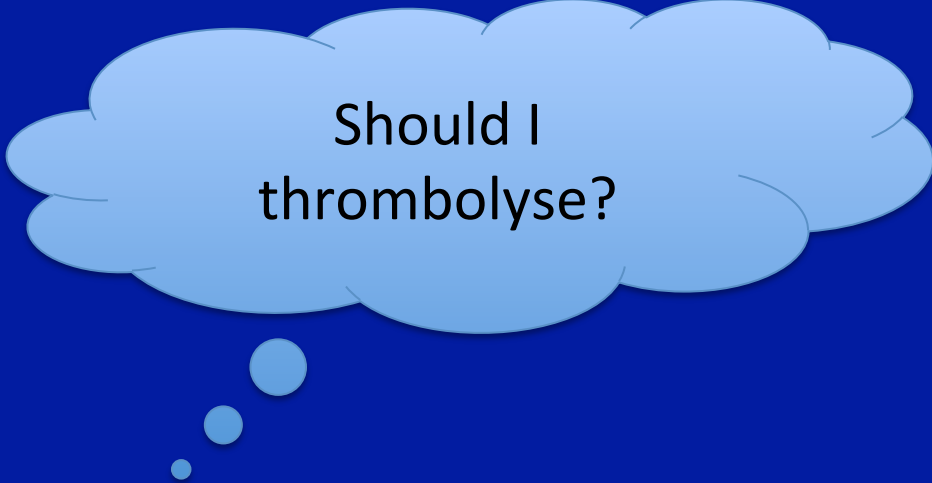
Pericardial fluid, RV squashed, IVC huge?



Should I needle the
heart?

Massive PE

RV squashing LV?



Should I
thrombolyse?

Hypovolaemia

Hyperdynamic heart, skinny IVC




Should I give fluids?

Q2. Is the ETT in the right place?

Is the ETT in the oesophagus?

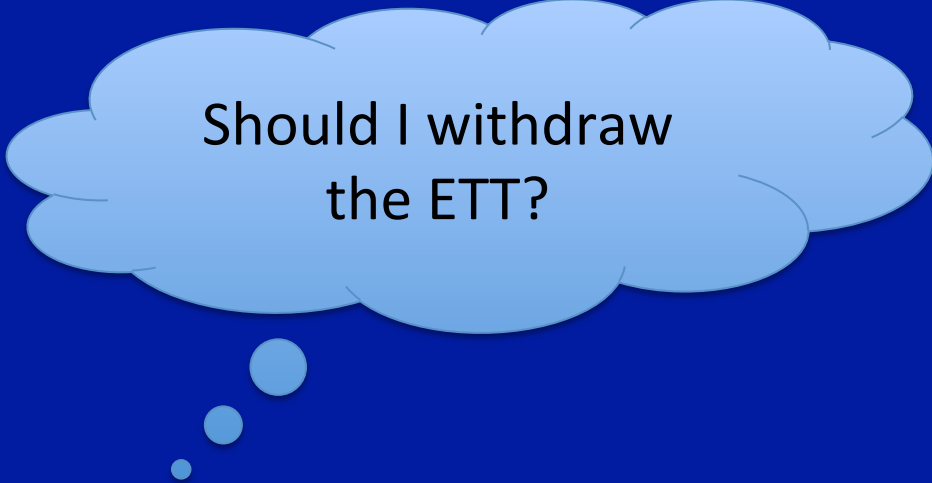
Absent lung sliding on either side

Patient turning blue



Should I check that
ETT?

Is the ETT in a mainstem bronchus?
Absent lung sliding on one side



Should I withdraw
the ETT?



Hang on...



Couldn't it be a PTX?

Is the ETT in the right main bronchus...

...or is there a pneumothorax?

Is the ETT in the right main bronchus...

...or is there a pneumothorax?

Stay tuned!

Breathless patient

Why is the patient breathless?

Tension PTX

Tamponade

Pneumonia

Acute cardiogenic pulmonary oedema (APO)

Pulmonary embolus (PE)

Asthma / COPD

(Other: rare)

How can I help?

- Tension PTX - needle the chest
- Tamponade - needle the heart
- Pneumonia - IVAB
- APO - NIV / GTN / frusemide
- PE - thrombolyse
- Anything else - try a bit of ventolin!

Finally... the shocked patient

1. Why is the patient shocked?
2. Can I give more fluids?

PoCUS won't tell you the diagnosis every time

But it will **always** tell you whether it's safe to give
more IV fluids!

Why is the patient shocked?

Obstructive

Cardiogenic

Hypovolaemic

Distributive

Dissociative

Why is the patient shocked?

- Obstructive - TPTX, massive PE, tamponade
- Cardiogenic - wet lungs, MI / CMP / valves...
- Hypovolaemic - pathological fluid, AAA...
- Distributive - septic, anaphylactic, neurogenic
- Dissociative - CO, cyanide

So... why RUSH?

Why NOT?