

# Clinical Case: Relapsing breathing difficulty

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# First episode

- 70 year-old active woman with a treated asthma, hypertension, 3 cm abdominal aortic aneurism. Anaphylaxis from NSAIDS previously.
- One night acutely ill with dyspnea. Intubated on the way to the hospital. No pain or fever.
- Obstructive breathing sounds. Blood pressure 125/60. ECG: sinustachycardia 122
- Moderately high CRP (83-122) and creatinine (139). Trop-t 0,04-0,09-0,06.

# Findings/development

- CXR: slight signs of congestion
- Echocardiography: normal
- CT: No sign of pulmonary embolism
- Steroids/Ventoline/Atrovent/Bricanyl
- CRP normalized. No antibiotics.
- "Spontaneous" recovery, extubated the next day .  
Second night again resp. failure and intubated.  
Extubated the next day
- Normal spirometry before discharge
- BP 160/70-220/130 in the ward
- ...?

# Discharge

- Diagnose:
  - Acute resp. failure
  - Unspecific Asthma
  - Hypertension
- Coronary follow-up planned. Increased hypertension treatment
- We dont know what caused this- we're just happy you got better...

# One month later

- Acute dyspnea. Intubated in the ER.
- ECG: sinustachycardia
- CXR: congestion
- Moderately elevated CRP, creatinine. Troponin T normal.
- Rapid recovery
  
- Now what?

# What is this?

- Acute heart failure? New echocardiography including "stress" with i.v. terbutaline.
- Acute asthma?
- Pulmonary embolism?
- Anaphylaxia?
- Infection?
- Or something else...

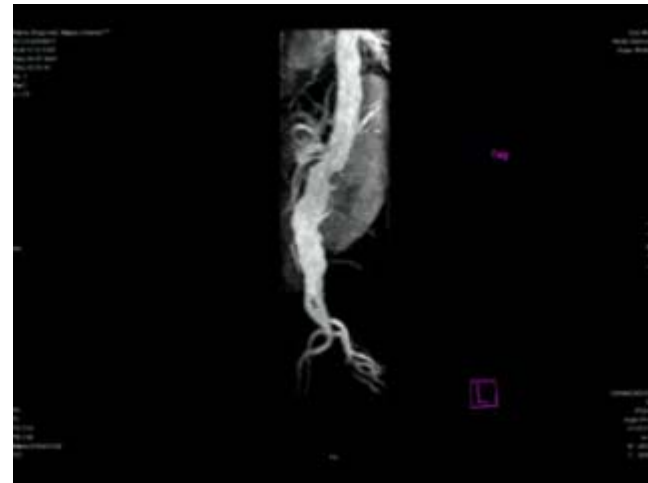
# Summery so far

- Pulmonary edema not explained by echocardiographic findings
- Symptoms at night
- Elevated creatinine
- Hypertension, difficult to treat
  - Actually: she did not tolerate ACE inhibitors a year ago because of increasing creatinine
- ???

# Renal artery stenosis

- May give FLASH PULMONARY EDEMA.
- Especially if bilateral
- Often recovers "spontaneously" without specific treatment after few hours
- Pathophysiology:
  - Probably involves increased activity of the renin-angiotensin axis with salt/water retention, volume overload.
  - Often concurrent diastolic dysfunction because of hypertension

Left renal artery: stenosis. Right kidney: atrophic



# Further

- Successful angioplasty on left renal artery
- Loses 8 kg of body water
- Anti-hypertension drugs tapered down
- No further episodes of flash edema

# Take home message

- Acute pulmonary edema with "normal" myocardial function = flash pulmonary edema may be caused by bilateral renal artery stenosis.
- Consider especially if:
  - Combination of hypertension, heart and renal failure.
  - Hypertension difficult to treat
  - Atherosclerosis elsewhere (like aortic aneurism).
  - Different kidney sizes on ultrasound (>1,5 cm)
  - ACE inhibitor intolerance because of decreasing renal dysfunction
  - Kidney transplanted patients