

S05en Benedikt Breznak (42 years old) - Pneumothorax

Mr. Breznak is a 42-year-old man who was taken to the emergency room after he hit a tree while riding a bicycle. At the time of the accident, he was wearing a helmet, which wasn't damaged. He remembers the accident and was not unconscious. He is being treated for hypertension, taking Prestarium neo 5 mg, no allergies. On the first reading of a full-body CT scan, a serial fracture of 4 ribs on the left, fracture of the humerus and femur on the left side dominates. He was indicated for urgent surgical intervention. The senior anesthesiologist sends you to the operating room with this patient. The senior anesthesiologist is available by phone if necessary. The patient has already been examined, 2 minutes of preoxygenation is being provided. Antibiotic prophylaxis was

students: 3x

notes

Laboratory: biochemistry and coagulation - no abnormality, blood count: Hb 96 g/L, PLT 146

Initial clinical status (simulation)**Monitor setup**

A	airways clear and safe	AB	B: RR 25 /min, SpO ₂ 93%
B	clear breathing sounds, weaker sound on the left chest apically		
C	cardio-vascular stable, regular heart action, no murmur, CRT 3 s	C	C: HR 92 /min (sinus r.), BP 107 / 55, EtCO ₂ 35 mmHg
D	GCS 15, AVPU- A, pupils 2+/2+		
E	Stiffneck collar, vacuum splints on left humerus and left femur		
			E: Body temperature 35,8 °C

Expected actions (in bullet points, for the videobriefing's checklist):

1. RSI (rapid sequence intubation) with MILS (manual in-line stabilization)
2. Examination according to ABCDE algorithm
3. Support of circulation, support, volumotherapy
4. Calling for help, delegating tasks to other team members
5. Recognising pneumothorax, correct decompression techniques, drainage

Notes on the simulation process (simulation development):**Once the artificial ventilation is provided:**

HR 163/min, BP 64/32, SpO₂ 87%, EtCO₂ 25 mmHg (all in 1 minute). Silent breathing above left chest.

- 1* ABC(DE) check OK, calling for help and early needle decompression: BP 82/51, HR 107 / min (in 1 minute)
 2* ABC(DE) check OK, **without** calling for help -> needle decompression is incorrect -> asystole (in 1 minute)
 3* if **NO** ABCDE check **AND/OR** without pneumothorax recognition in time 4:00 -> asystole, EtCO₂ 6 mmHg,
 4* In asystole: needle decompression AND 1 mg adrenalin i.v.-> ROSC: BP 79/42, HR 98 /min, EtCO₂ 47 mmHg

Start of the simulation:

"The Voice of God" starts the simulation after about 5 seconds of preoxygenation

Take home message:

- 1) Dg. of tension pneumothorax is clinical - chest decompression can be performed on the basis of clinical examination
- 2) Diagnosis and treatment of tachycardia and hypotension in case of a polytraumatized patient

A scenario for the diagnosis and treatment of pneumothorax developed after the patient is connected to positive pressure ventilation.



S05en - Participant 1 - Anesthesiologist

Mr. Breznak is a 42-year-old man was taken to emergency room after he hit a tree while riding a bicycle. At the time of the accident he was wearing a helmet, which wasn't damaged. He remembers the accident and was not unconscious. He is being treated for hypertension, taking Prestarium neo 5 mg, no allergies. On the first reading full-body CT scan, serial fracture of 4 ribs on the left, fracture of the humerus and femur on the left side dominates. He was indicated for urgent surgical intervention. The senior anesthesiologist sends you to the operating room with this patient. The senior anesthesiologist is available by phone if necessary. The patient has already been examined, 2 minutes of preoxygenation is being provided. Antibiotic prophylaxis was administered 30 min. ago at A&E. Let's get straight to the introduction to general anesthesia.

Laboratory: biochemistry and coagulation normal, blood count: Hb 96 g/l, PLT $146 \cdot 10^9/l$

S05en - Participant 2 - Senior Anesthesiologist

You are a doctor with specialized competence in the field of AIM, today you are supervising a younger colleague - you have send him to the trauma room with Mr. Breznak.

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S05en - Participant 3 - Anesthesiology Nurse

At the tramatology operationg room you have a patient with polytrauma. Mr. Breznak is a 42-year-old man was taken to emergency room after he hit a tree while riding a bicycle. At the time of the accident he was wearing a helmet, which wasn't damaged. He remembers the accident and was not unconscious. He is being treated for hypertension, taking Prestarium neo 5 mg, no allergies. On the first reading full-body CT scan, serial fracture of 4 ribs on the left, fracture of the humerus and femur on the left side dominates. He was indicated for urgent surgical intervention.

You have an headset in your ear that the lector can use to talk to you. Follow the instructions.