

PEAs in a POD: PE

By

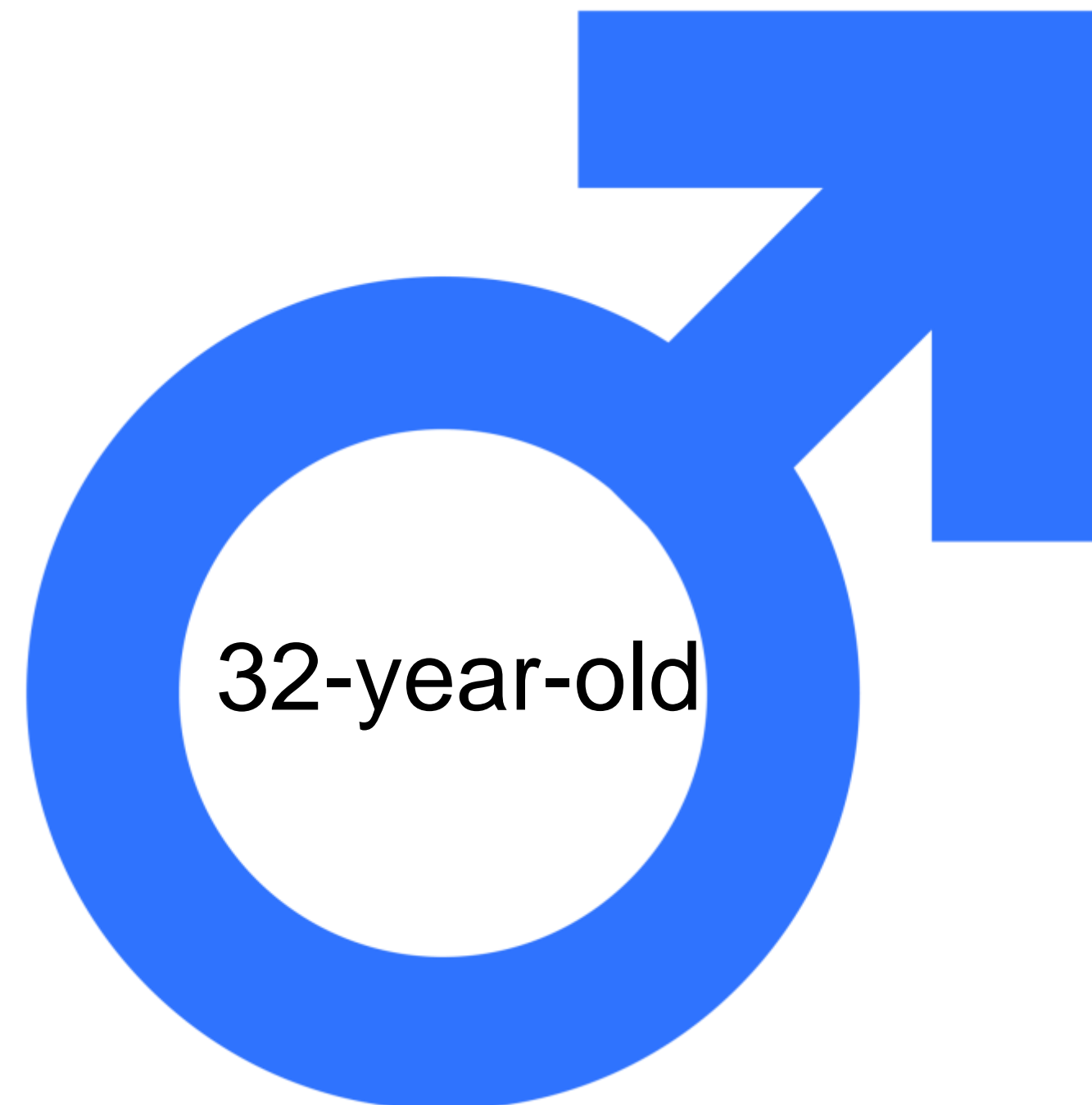
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Unresponsive
Gaspings respiration



32-year-old

PRIMARY SURVEY

Pulse and BP – Not Recordable

Monitor showed organized cardiac activity @ 32/min

Rhythm identified as – PEA



32-year-old
PEA

PRIMARY SURVEY

CPR started according to standard ACLS protocol

ROSC achieved after 5 cycles of CPR

Intubated



32-year-old
PEA
Intubated

PRIMARY SURVEY

Post ROSC-
50/30mmHg

Pulse 170/min BP

INJ NORADRENALINE 8mg in 50cc NS @
20ml/hr

RR – 35/min and SPO2 – 75% on 100%Fio2 at
5 PEEP

Chest was clear



32-year-old

PEA

Intubated

Hypoxia, Hypotension

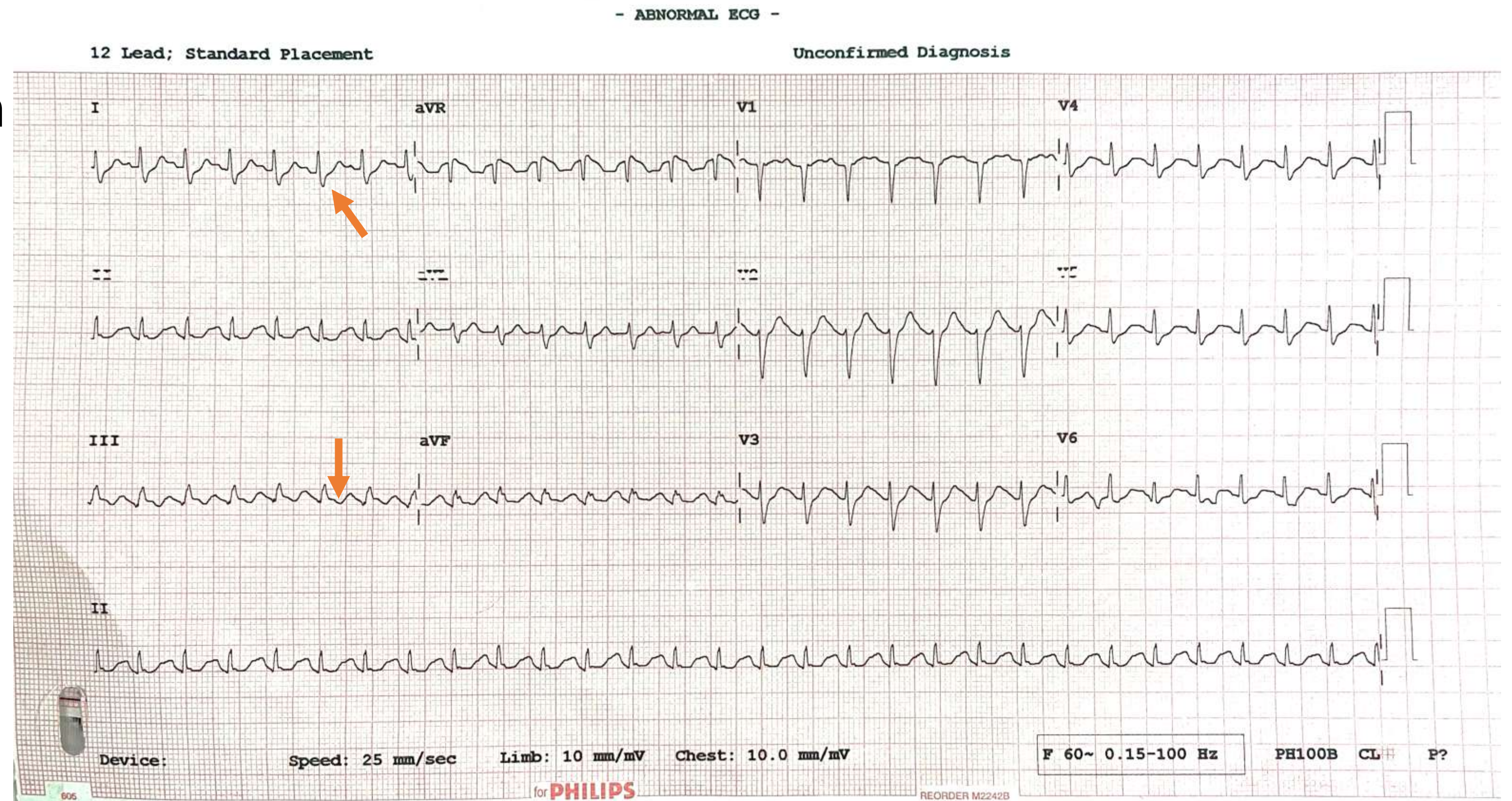
PRIMARY SURVEY





32-year-old
PEA
Intubated
Hypoxia, Hypotension
Xray normal

PRIMARY SURVEY





32-year-old

PEA

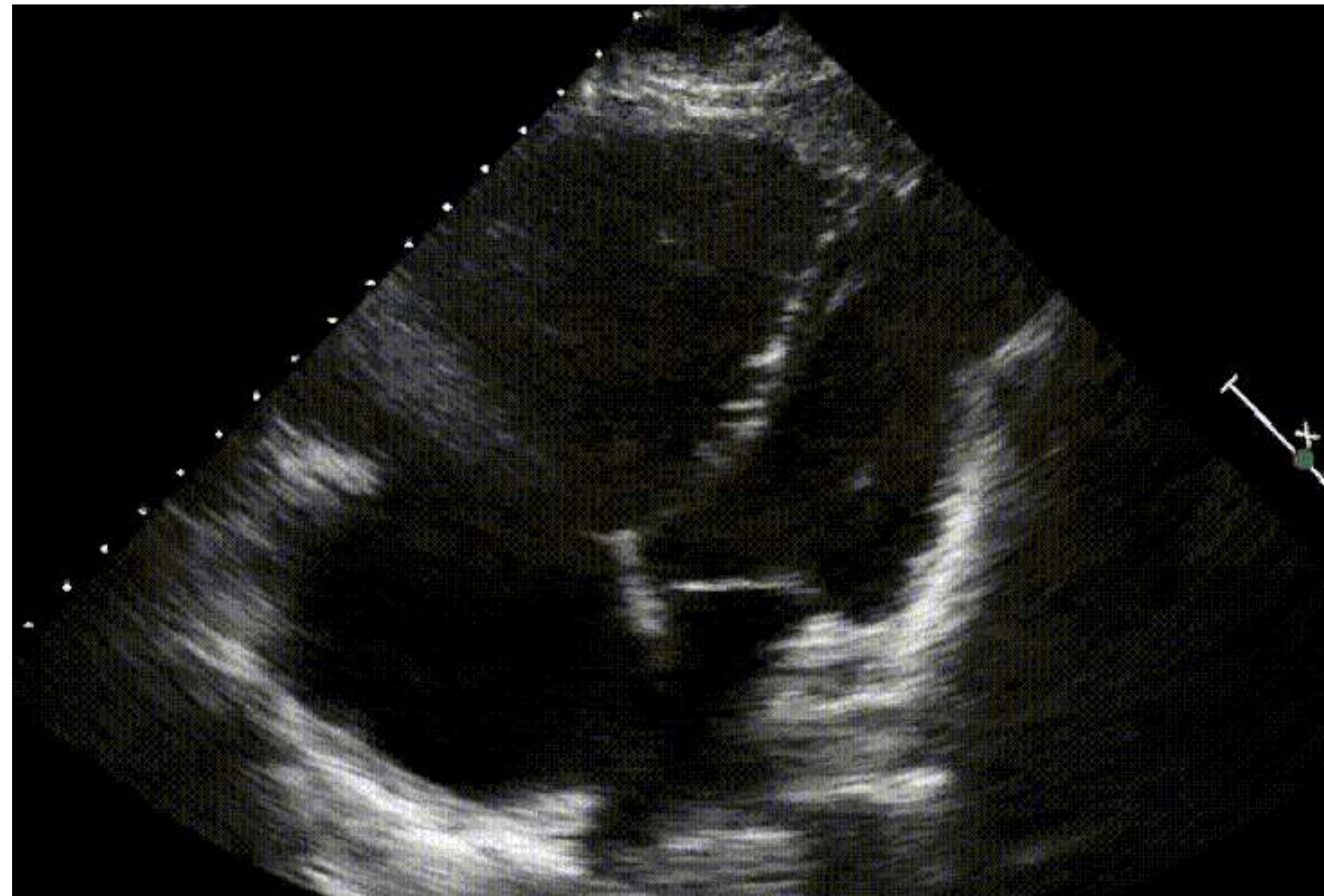
Intubated

Hypoxia, Hypotension

Xray normal

Sinus Tachy, S1T3

PRIMARY SURVEY





32-year-old

PEA

Intubated

Hypoxia, Hypotension

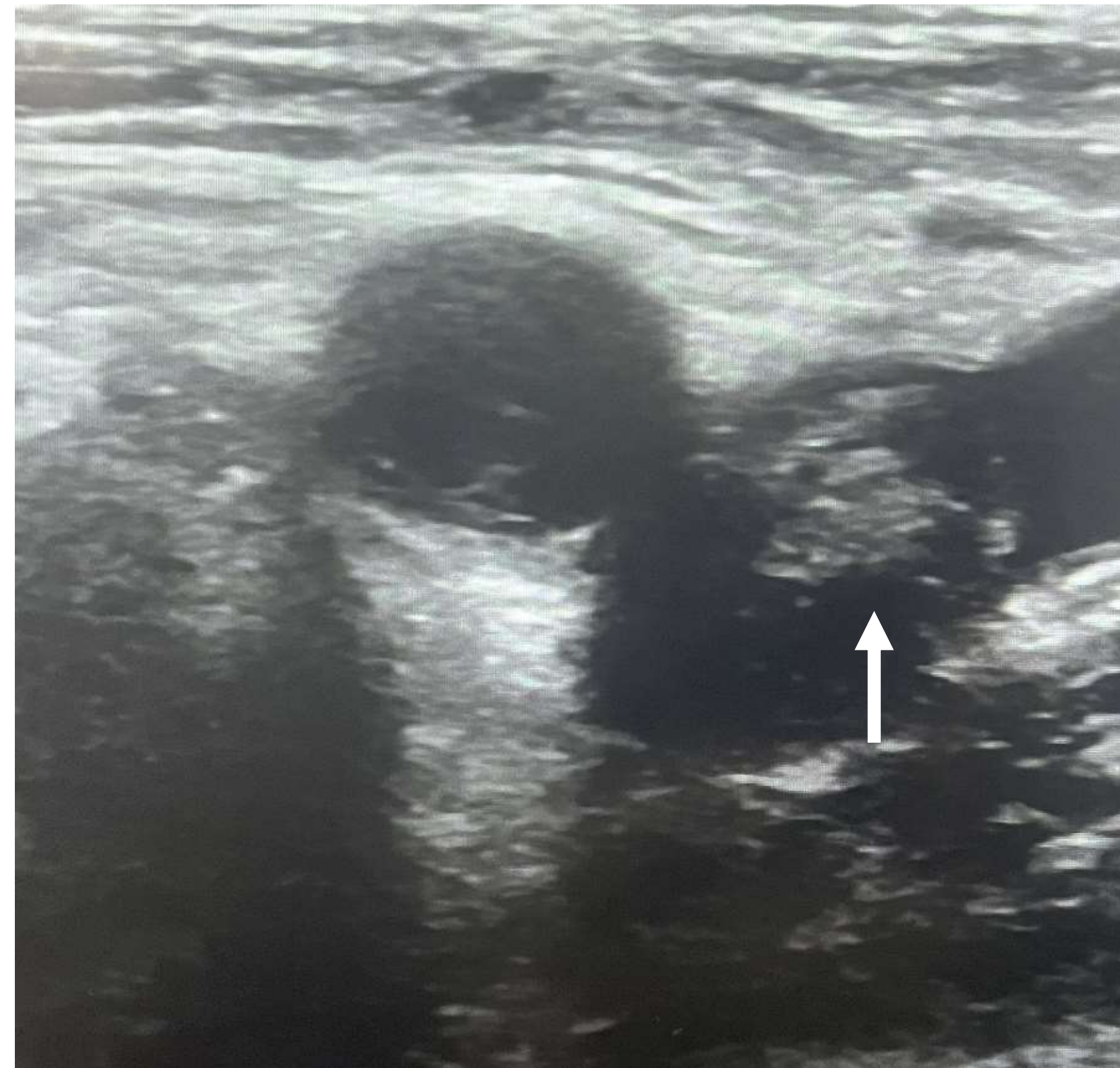
Xray normal

Sinus Tachy, S1T3

RA+RV dilated

Mc Connell's sign +ve

PRIMARY SURVEY





32-year-old

PEA

Intubated

Hypoxia, Hypotension

Xray normal

Sinus Tachy, S1T3

RA+RV dilated

Mc Connell's sign +ve

DVT

Metabolic acidosis with respiratory acidosis

PRIMARY SURVEY

Measured (37.0C)		
pH	<u>7.08</u>	
pCO2	<u>69</u>	mmHg
pO2	<u>57</u>	mmHg
Na+	130	mmol/L
K+	4.8	mmol/L
Ca++	1.02	mmol/L
Glu	<u>393</u>	mg/dL
Lac	<u>5.3</u>	mmol/L
Hct	37	%

Derived Parameters		
Ca++(7.4)	0.89	mmol/L
HCO3-	20.5	mmol/L
HCO3std	16.5	mmol/L
TCO2	22.6	mmol/L
BEecf	-9.5	mmol/L
BE(B)	-10.1	mmol/L
S02c	75	%
THbc	11.5	g/dL



32-year-old

PEA

Intubated

Hypoxia, Hypotension

Xray normal

Sinus Tachy, S1T3

RA+RV dilated

Mc Connell's sign +ve

Metabolic acidosis with re

SAMPLE

Breathlessness and chest heaviness 1 hour ago

Unresponsiveness since 10 min.

Past – smoker and alcoholic



32-year-old

PEA

Intubated

Hypoxia, Hypotension

Xray normal

Sinus Tachy, S1T3

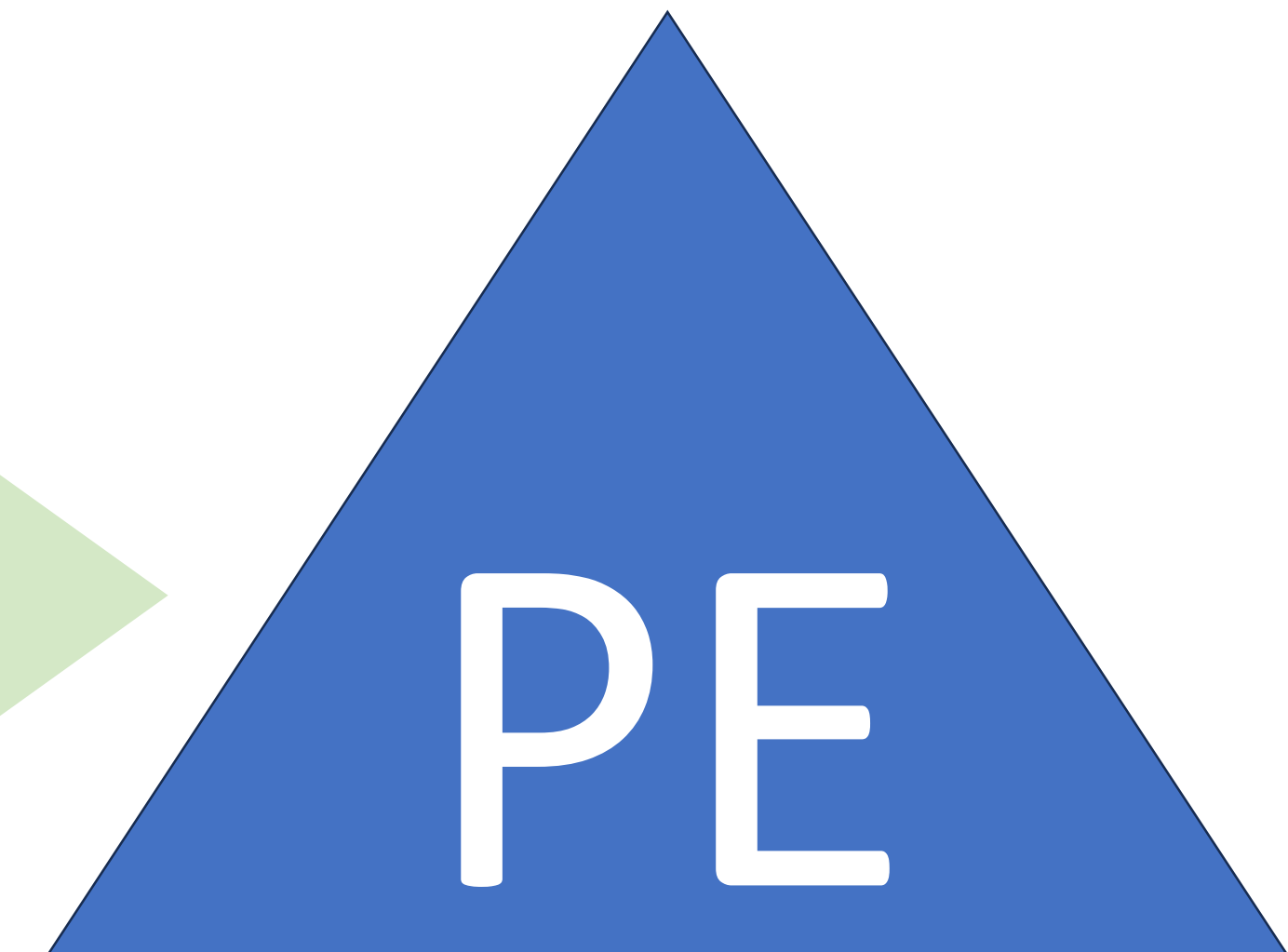
RA+RV dilated

Mc Connell's sign +ve

DVT

Metabolic acidosis with respiratory acidosis

Breathlessness, chest pain, smoker



- Fibrinolysis with INJ TENECTEPLASE 35mg IV STAT was done.
- INJ CLEXANE 1mg/kg SC was given.
- Noradrenaline requirement decreased.
- Oxygenation improved.
- GCS improved from 3/15 to 10T/15.
- Was extubated and shifted to RICU
- Discharged successfully.

DISCUSSION

Massive pulmonary embolism

- ❑ Accounts for 8% to 13% of unexplained cardiac arrests.^{1,2}
- ❑ Very high mortality(52%) in patients who are hemodynamically unstable.^{3,4}

POCUS

- It allows for rapid diagnostic assessment that can guide therapy for time-sensitive, critically ill patients.

□ 2D ECHO

Right heart strain (RA/RV dilated, RV > LV)

Bowing of interventricular septum into the left ventricle.

Right ventricular systolic dysfunction.

McConnell's sign:- The most specific finding at 94% and is defined as right ventricular free wall akinesia with sparing of apex.⁵

□ DVT screening

When performed by trained ultrasonographers (sensitivity and specificity-96%), and by trained emergency physicians (sensitivity-96.1%, specificity-96.8%).⁶



Review

> [Thromb Haemost.](#) 2013 Jan;109(1):137-45. doi: 10.1160/TH12-07-0473.

Epub 2012 Nov 8.

Accuracy of emergency physician-performed ultrasonography in the diagnosis of deep-vein thrombosis: a systematic review and meta-analysis

[Fulvio Pomero](#)¹, [Francesco Dentali](#), [Valentina Borretta](#), [Matteo Bonzini](#), [Remo Melchio](#), [James D Douketis](#), [Luigi Maria Fenoglio](#)

RISK FACTORS

- Age
- Obesity
- Pregnancy and post partum state
- Prior VTE
- Solid cancers
- Hematologic disorders
- Thrombophilia
- Recent surgery or major trauma
- Immobility
- Bed rest
- Smoking
- Long distance travel
- Estrogen

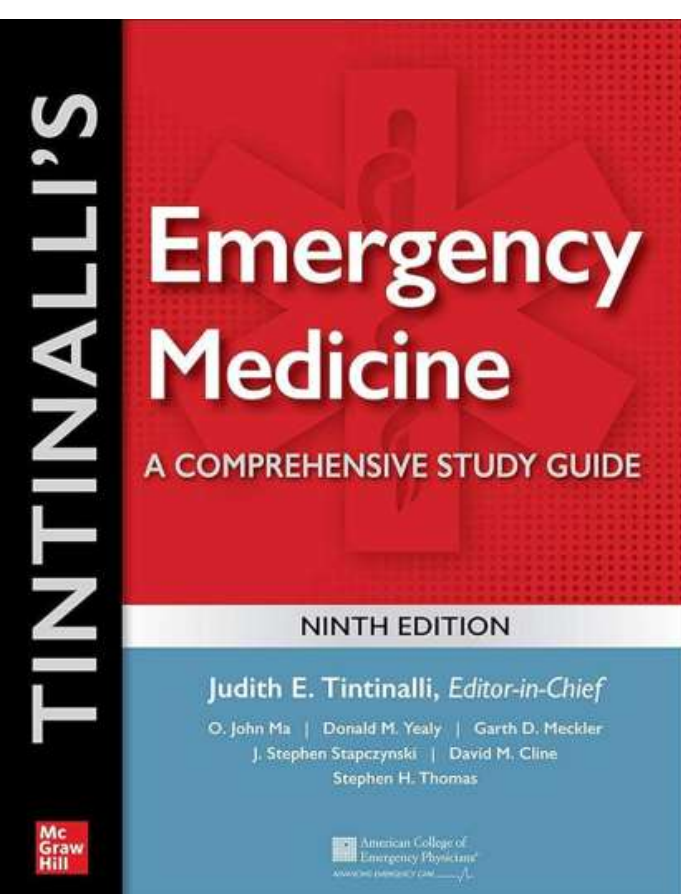
RISK STRATIFICATION

- Clinical gestalt
- Well's score
- Simplified Geneva scoring
- PERC criteria

WELL'S SCORE

TABLE 56-5 Original Wells' Score for Pulmonary Embolism	
Factor	Points*
Suspected deep venous thrombosis	3
Alternative diagnosis less likely than PE	3
Heart rate >100 beats/min	1.5
Prior venous thromboembolism	1.5
Surgery or immobilization within prior 4 wk	1.5
Active malignancy	1
Hemoptysis	1

*Risk score interpretation (probability of pulmonary embolism): >6 points = high risk (78.4%); 2–6 points = moderate risk (27.8%); and <2 points = low risk (3.4%).



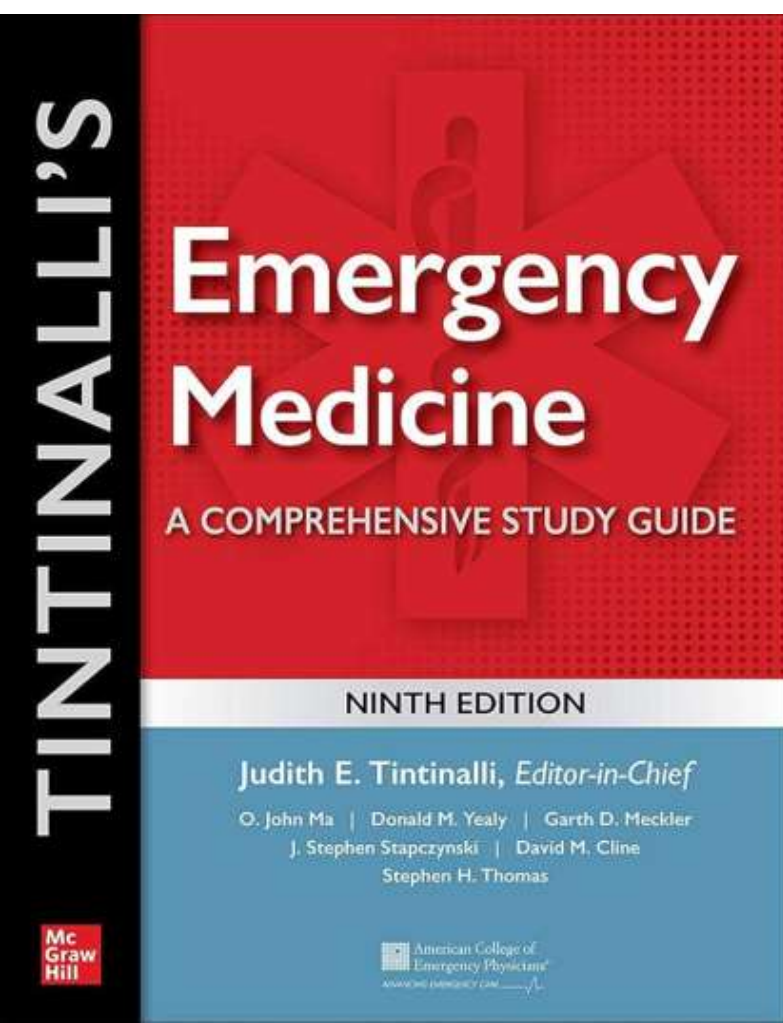
REVISED AND SIMPLIFIED GENEVA SCORE

TABLE 56-7 Revised and Simplified, Revised Geneva Score (RGS) for Pulmonary Embolism⁵⁰

Clinical Variable	Points	
	RGS*	Simplified RGS [†]
Age >65 y	1	1
Previous venous thromboembolism	3	1
Surgery requiring anesthesia or fracture of lower limb in past month	2	1
Active malignancy	2	1
Unilateral leg pain	3	1
Hemoptysis	2	1
Pain on lower limb deep vein palpation with unilateral leg edema	4	1
Heart rate		
75–94 beats/min	3	1
>95 beats/min	5	1

*Total score of 0–3 indicates low probability, score of 4–10 indicates moderate probability, and score of >10 indicates high probability of pulmonary embolism.

[†]Score ≤4 indicates that pulmonary embolism is unlikely.

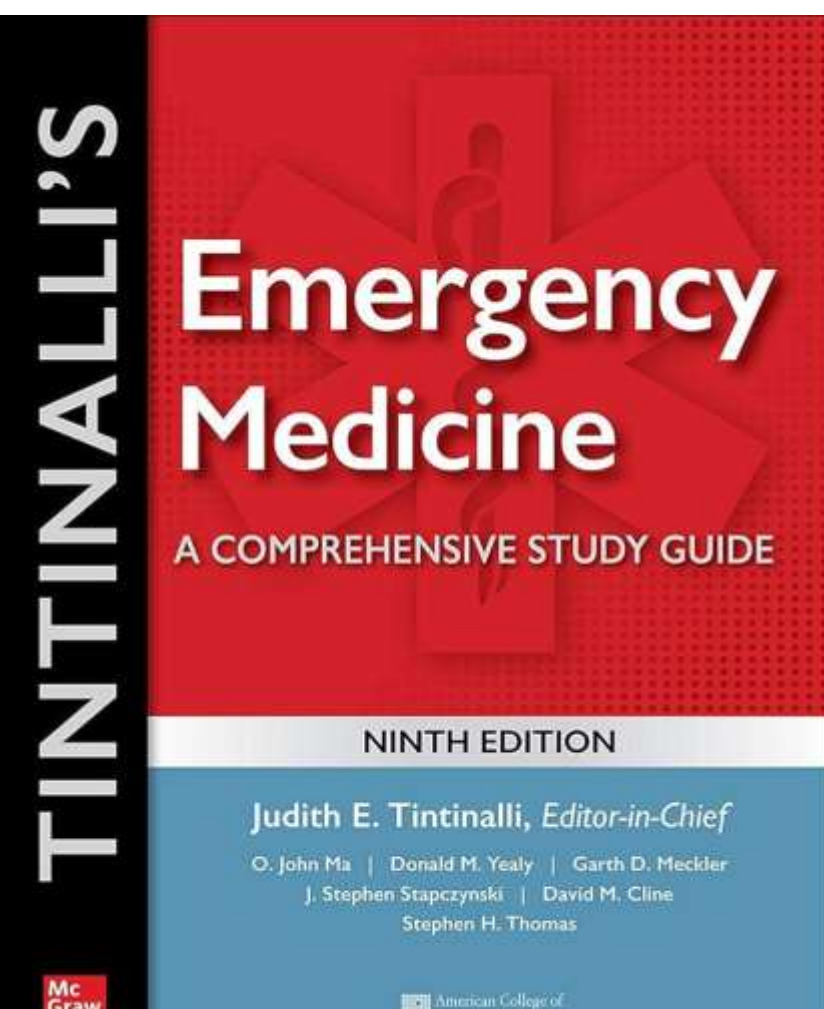


PERC CRITERIA

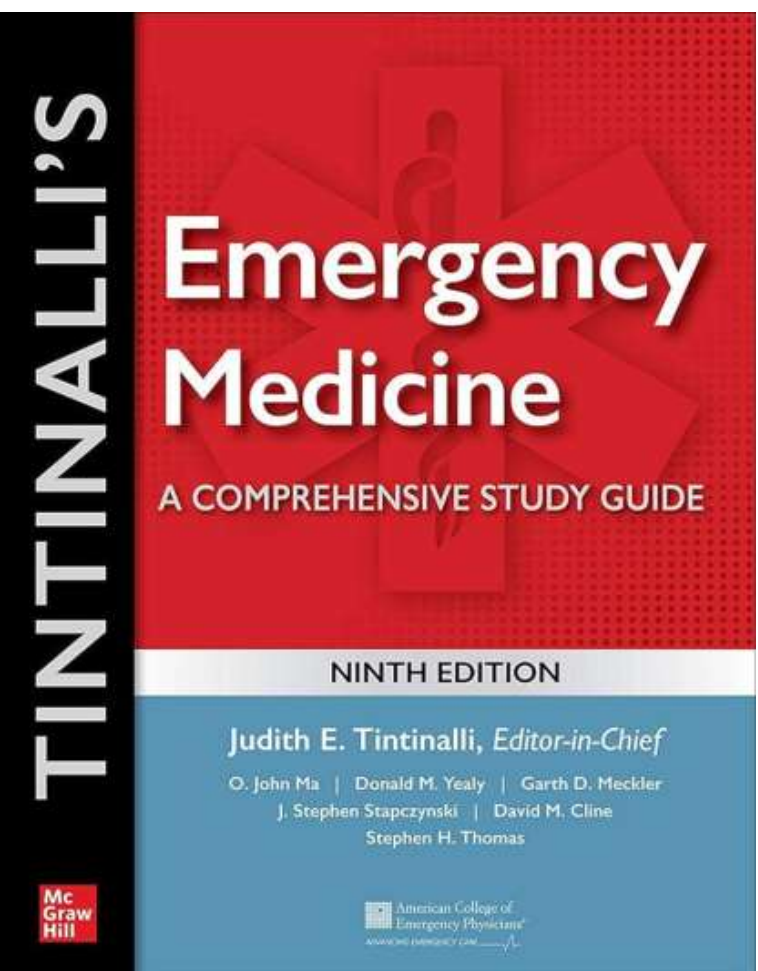
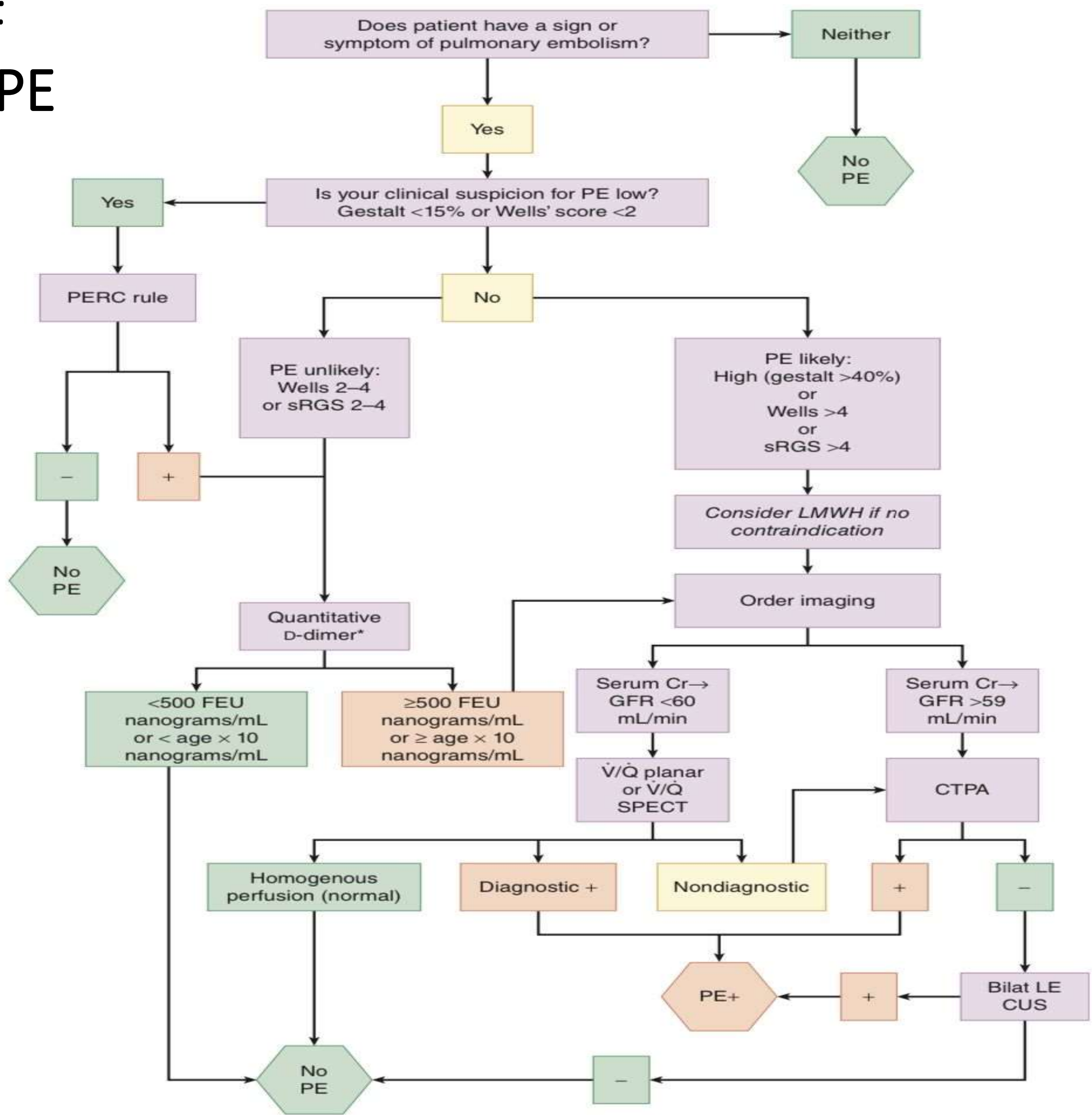
TABLE 56-4

Pulmonary Embolism Rule-Out Criteria Rule (all nine factors must be present to exclude pulmonary embolism)⁴¹

- Clinical low probability (<15% probability of pulmonary embolism based on gestalt assessment)
- Age <50 years
- Pulse <100 beats/min during entire stay in ED
- Pulse oximetry >94% at near sea level (>92% at altitudes near 5000 feet above sea level)
- No hemoptysis
- No prior venous thromboembolism history
- No surgery or trauma requiring endotracheal or epidural anesthesia within the last 4 wk
- No estrogen use
- No unilateral leg swelling, defined as asymmetrical calves on visual inspection with patient's heels raised off the bed



EVALUATION OF SUSPECTED PE



- ❑ Thrombolysis in hemodynamically unstable patients and during ongoing arrest can decrease mortality and improve survival in case of massive PE.
- ❑ The current Advanced Cardiac Life Support and American Heart Association guidelines suggest that thrombolytics should be considered for cardiac arrest due to presumed PE.^{7,8}

TAKE HOME MESSAGE

- Pulseless electrical activity during cardiac arrest portends a poor prognosis.
- Clinical gestalt should be towards PE in case of undifferentiated cardiac arrest with pulseless electrical activity.
- POCUS is a very important screening tool to diagnose such cases, so that early treatment can be initiated.

REFERENCES

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- ❑ [8] Neumar RW, Shuster M, Callaway CW, et al. Part 1: executive summary 2015 American Heart Association guidelines update for cardiopulmonary resuscitation and emergency cardiovascular care. *Circulation* 2015;132:S315–67.

Thank you!!!!