

Q). 504 - altered sensorium,
 cyanosis, oliguria, weak rapid
 pulse, tachypnea, cool clammy
 extremities.

Q) provisional diagnosis?

X Q) etiology. ^{what is mean?} ^{of what}

Q) mention organs involved.

describe pathology in lung.

Q) mention 4 types of shock?

Q) morphological changes in organs.

Q) septic shock - pathogenesis.

⇒ Shock is defined as a state of systemic hypoperfusion due to diminished cardiac output.

or reduced effective circulating blood volume → impairs tissue perfusion and leads to cellular hypoxia.

Types

① cardiogenic.

② hypovolemic.

③ septic

④ Neurogenic & anaphylactic shock.

Cardiogenic.

hypovolemic

anaphylactic &

Neurogenic

Mechanism

• failure of myocardial pump due to intrinsic myocardial damage; Extrinsic compression/obstruction to outflow.

• fluid loss.

• inadequate blood or plasma volume.

eg:

- Haemorrhage
- vomiting
- diarrhoea
- Burns
- trauma

Spinal cord injury → anaphylactic accident → N.S. → auto vasodilation → hypotension → tissue hypoperfusion.

IgE mediated HSR → A.S.

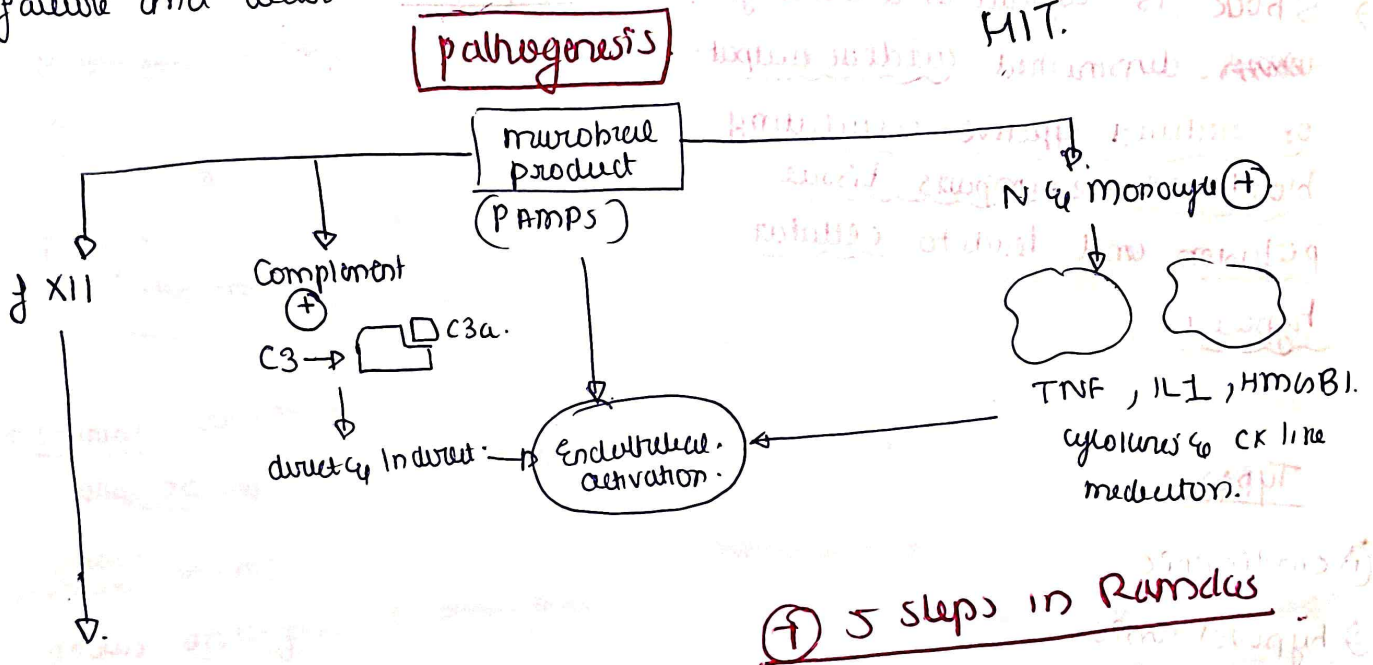
Example

: MI, Arrhythmia, ventricular rupture, Cardiac tamponade, PE.

Septic Shock.

Septic shock is caused by host responses to Bacterial, viral or fungal infection;

It is a systemic inflammatory condition characterized by endothelial cell activation, tissue edema, DIC, and metabolic derangement. that often lead to organ failure and death.



(+) 5 steps in Robbins

Figure in Robbins - Screenshot -

Basic pathogenesis

- massive outpouring of inflammatory mediator from innate & adaptive immune cells.

- peripheral vasodilation
- vascular leakage
- neovascularization
- endothelial activation

DIC
WBC mediated injury.

Tissue hypoxia.
↓
persistent
↓
death.

Morphology of Organ.

→ Changes in Cardiogenic/hypovolemic Shock.

Long

• Longs are relatively resistant to hypovolemic shock & hypoxic injury

Adrenal

• **Lipid depletion** in cortical cell:
 • due to conversion of relatively inactive vacuolated cells to metabolically active cells.
 • active cells used pt to make steroids.

• focal hemorrhage - in adrenal cortex. {in severe shock}

• Massive **hemorrhagic** necrosis of entire adrenal gland.

↓
 Waterhouse - Friderichsen's Soc.

as) with meningococcal septicemia.

Gross

• But in shock due to bacterial sepsis/trauma, it shows

↓
diffuse alveolar damage

↓
 that can lead to **ARDS**.

GROSS

• Firm, congested lungs
 cut surface: oozes frothy fluid

MC

• Edema - interstitial & alveolar.
 • Necrosis - of alveolar epithelium & endothelium.

• Intra-vascular microthrombi

• Hyaline membrane

Kidney

• **acute tubular necrosis** {acute renal failure}

GROSS:

enlarged, swollen, congested, pale cortex.

• cut section - blood pooling in outer section of medulla.

MC

• acute tubular necrosis - dilated tubules, epithelial necrosis.
 • pigmented cast - {from Hb, myoglobin}.
 • interstitial edema & mononuclear infiltration.

Heart

GROSS: petechial hemorrhages on epicardium & endocardium.

MC

• myocyte necrosis: light microscopy.
 • contraction bands: microscopy.

Liver, Brain, GI

↓
 in Ramadas tube.