

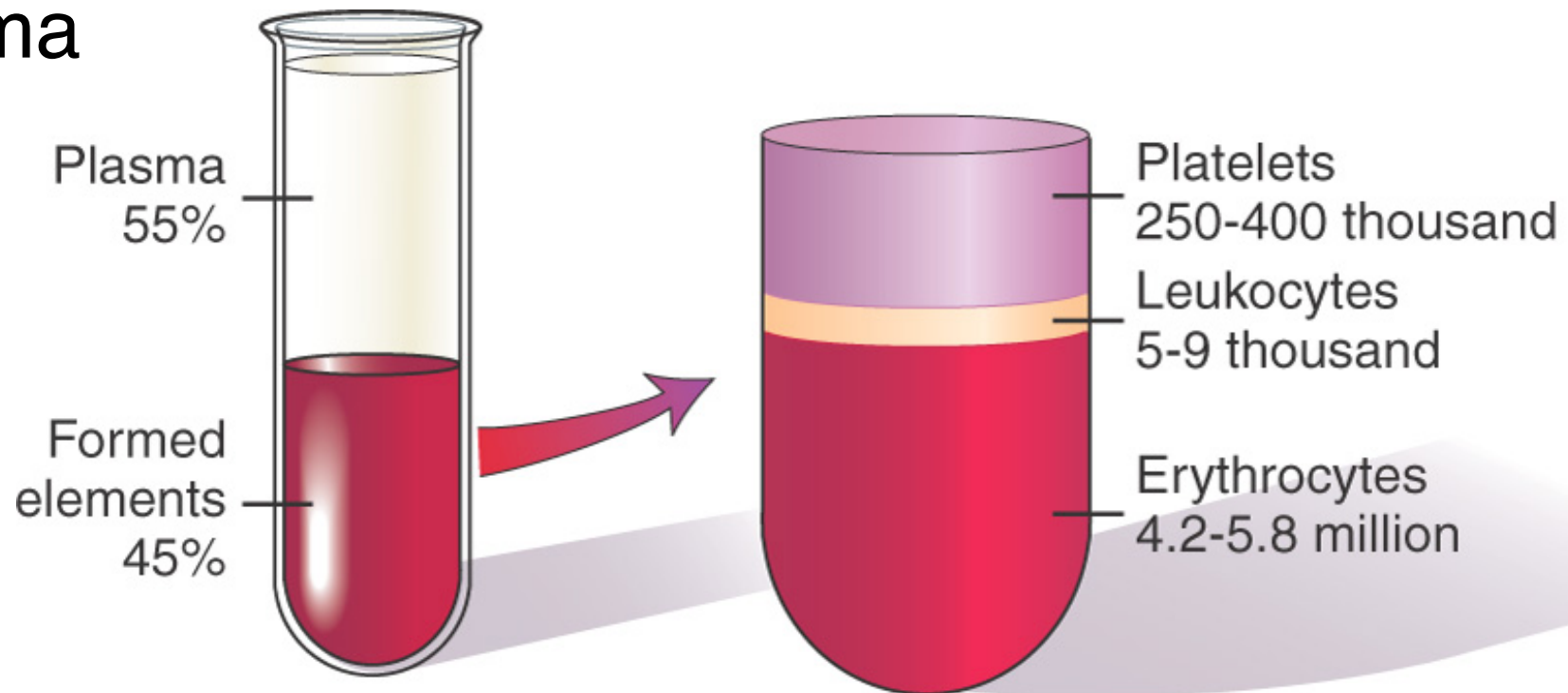
# Renal and Hematologic Emergencies

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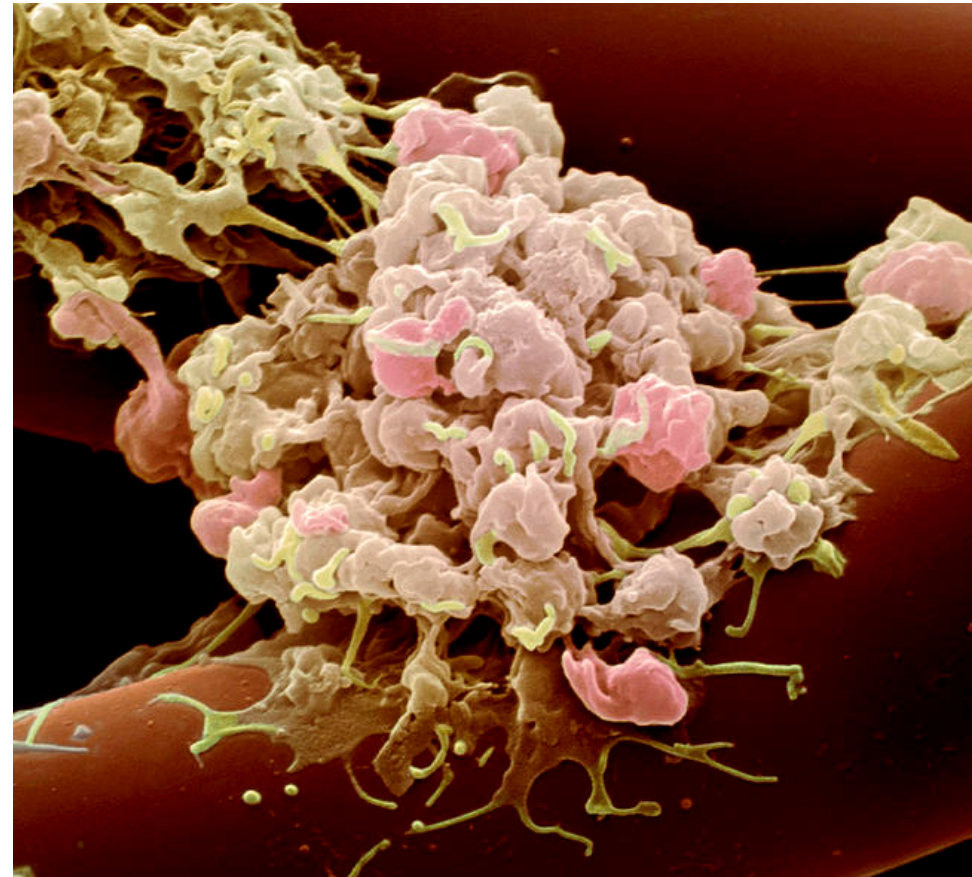
# Blood

- RBCs
- WBCs
- Platelets
- Plasma



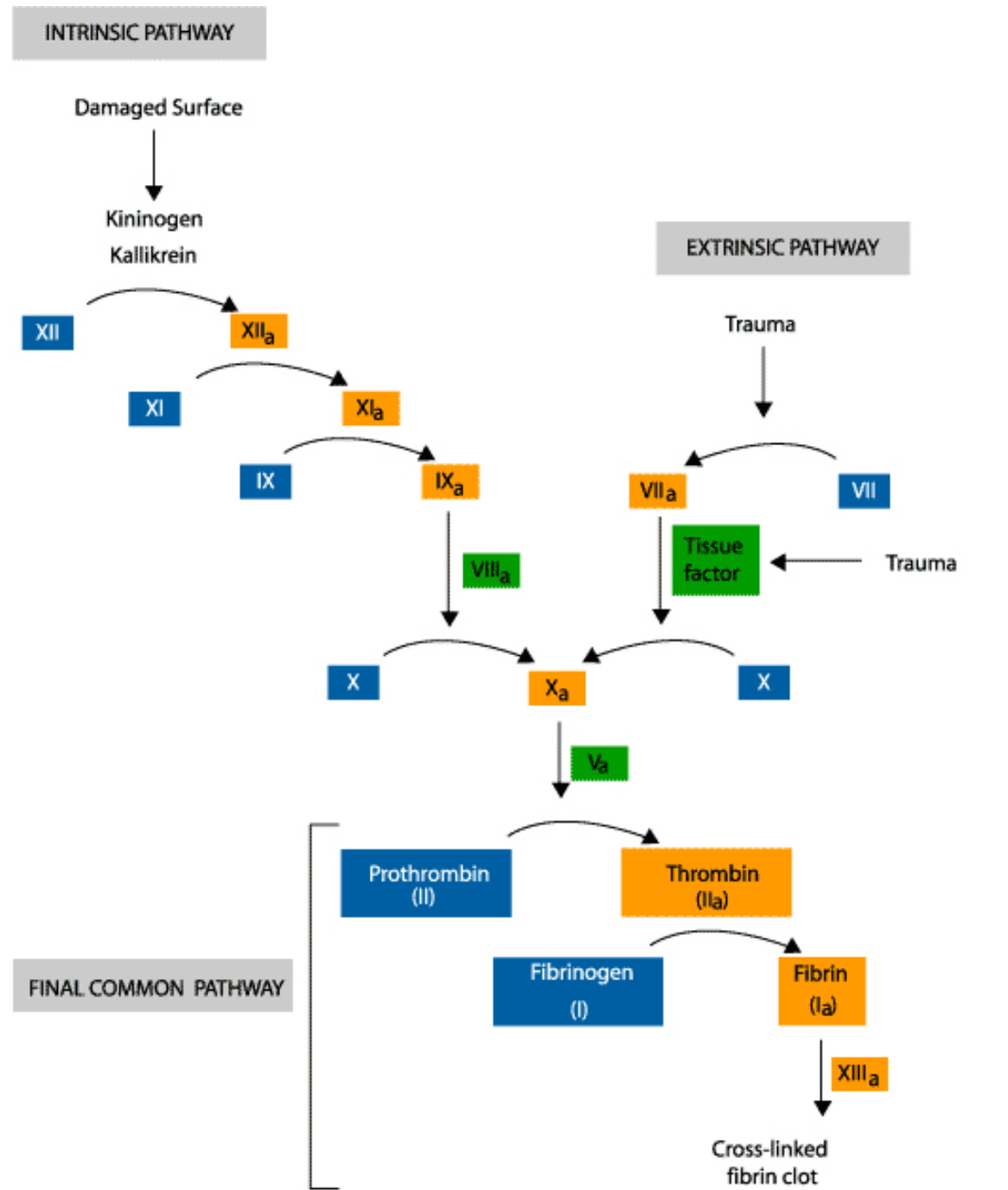
# Blood Clotting

- Platelets: rapid, initial response
  - platelet aggregation
- Clotting factors: proteins produced in liver
  - when activated initiate the clotting cascade





# Clotting Cascade





# Blood Clotting

- Coagulopathy = abnormal clotting of blood
  - Liver disease
  - CA
  - Inherited disorders



# Anticoagulant Use

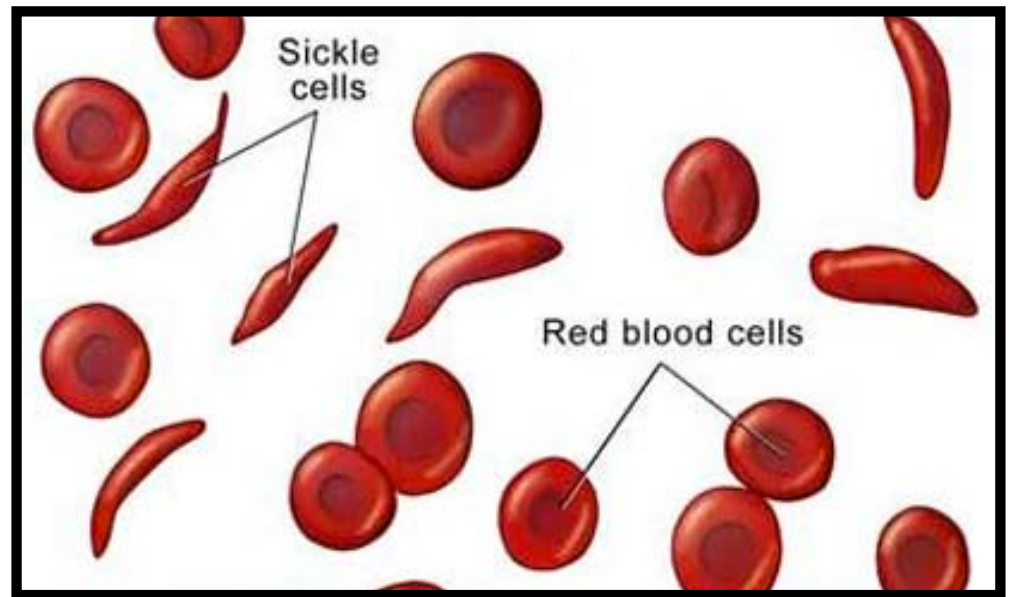
- Atrial fibrillation
  - Aspirin
  - Coumadin (warfarin)
  - Plavix (clopidogrel)
  - Rivaroxaban (Xarelto)
  - Dabigatran (Pradaxa)



Increased risk of intracranial hemorrhage!

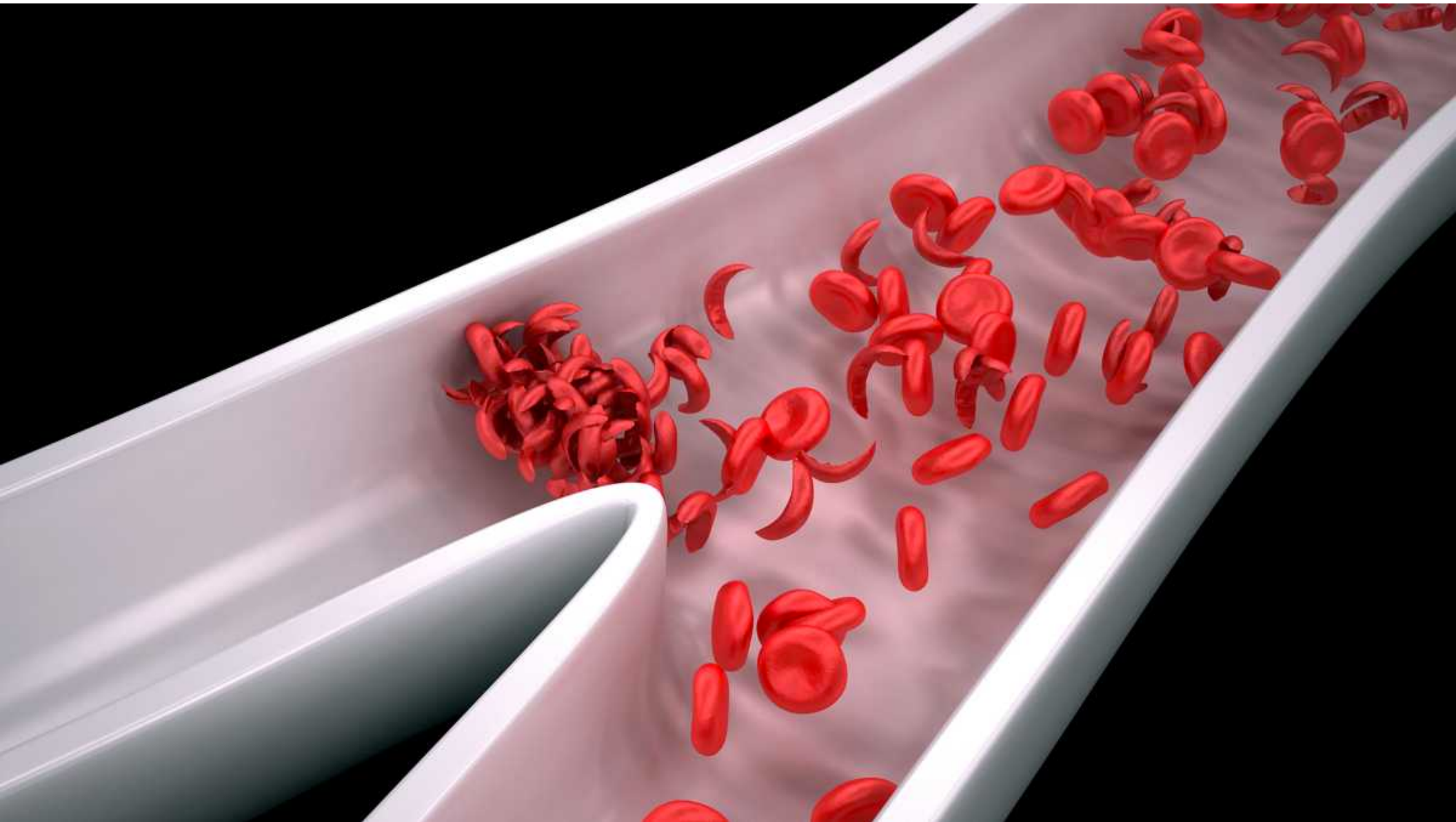
# Sickle Cell Anemia

- Anemia = decreased RBCs in circulation
- SCA
  - genetic defect
  - RBCs deformed





# SCA: Vaso-Occlusive Crisis



# Sickle Cell Anemia

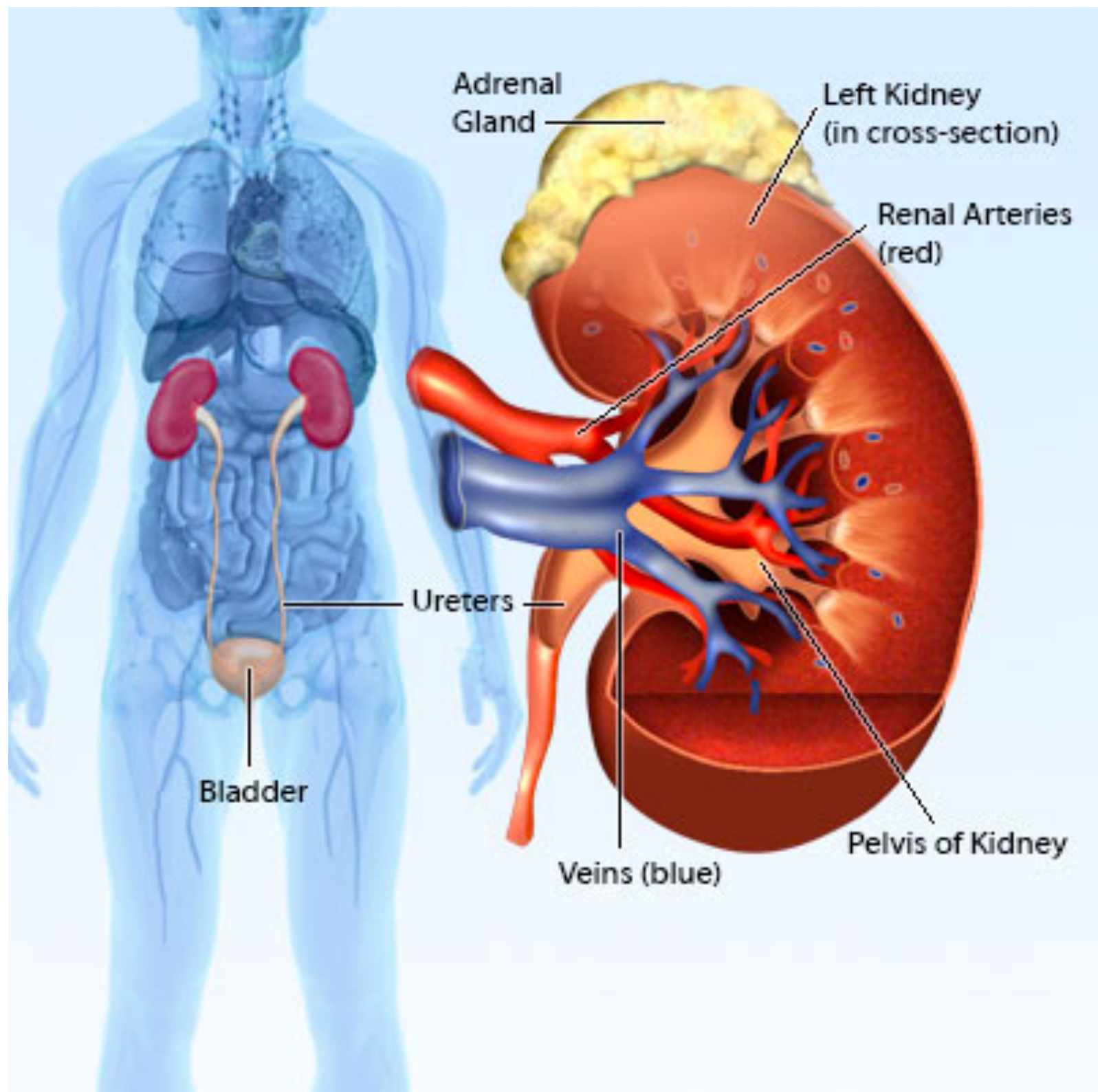
The background of the slide features two red blood cells. On the left is a normal, smooth, biconcave disc-shaped red blood cell. On the right is a sickle cell, which is elongated, curved into a crescent shape, and has a rough, irregular surface. Both cells are a deep red color.

- Splenic sequestration crisis
  - spleen damaged = flank pn, splenomegaly
- Acute chest syndrome
  - lungs damaged = SOB, CP, hypoxia
- Priapism
- Stroke

# Sickle Cells Crisis: Treatment

- ABCs
  - Administer high-flow oxygen
- ALS for pn control





# Urinary Tract Infection

- #2 cause of sepsis
- Most often involves urethra, bladder
  - can progress up to kidneys = pyelonephritis
- Risk factor = being female, urinary catheter

# UTI: S/S

- Pn with urination, trouble urinating, foul-smelling urine, cloudy urine
- Pyelonephritis = fever, flank pn, N/V



# UTI: Treatment

- Supportive measures only

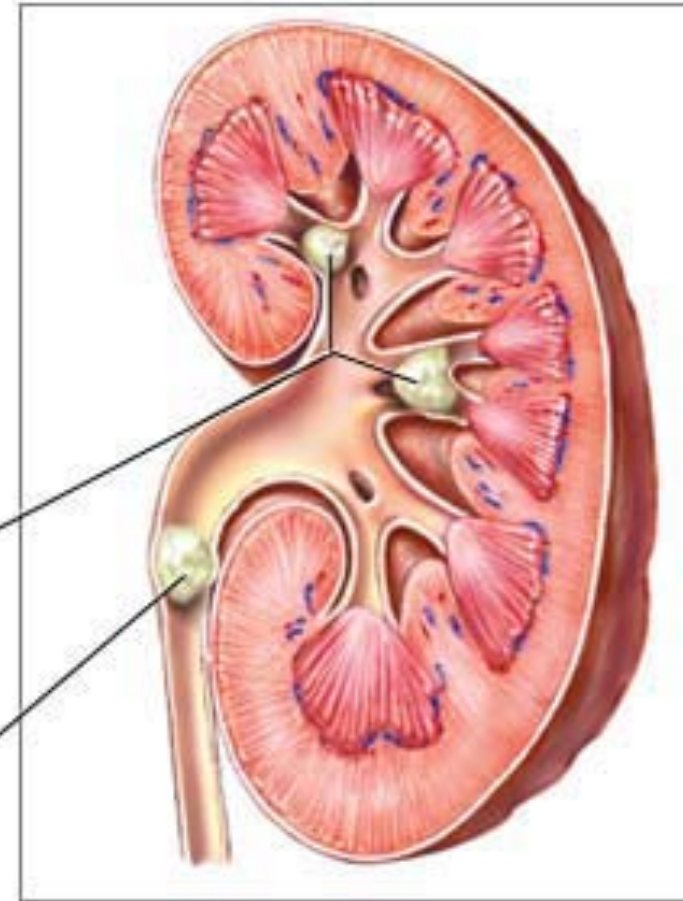
# Kidney Stones

- Unilateral flank pain, groin pain
- Severe pain!
- Blood in urine
- N/V



Kidney stones in the minor and major calyces of the kidney

Kidney stone in the ureter





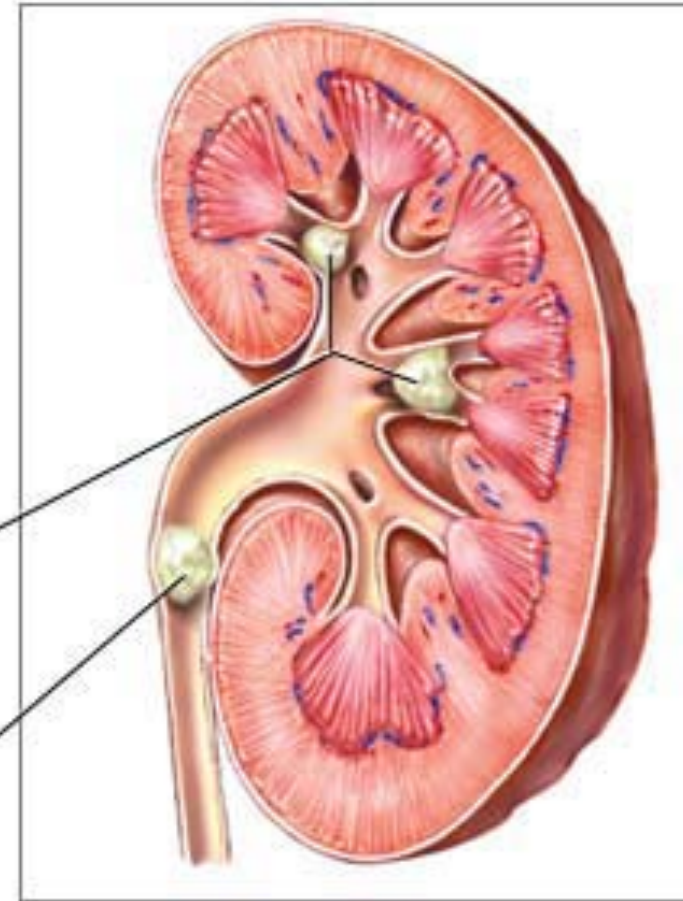
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# Kidney Stone:

- Supportive measures only
- ALS for pain control



# Renal Failure

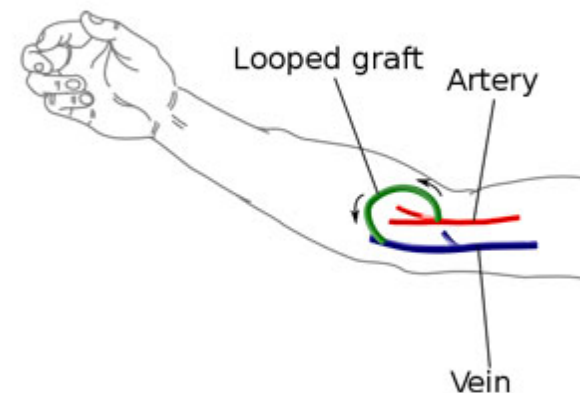
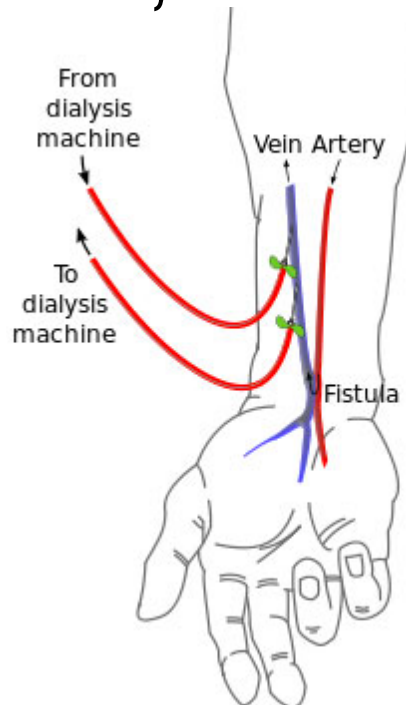
- Kidneys can no longer remove waste products from blood (this is bad!)
- Acute renal failure: shock, toxic ingestions, urinary blockage
- Chronic renal failure: HTN, diabetes, genetic disorders

# End-Stage Renal Disease

- ERSD = bad
- Dialysis or die
- Hemodialysis versus peritoneal dialysis

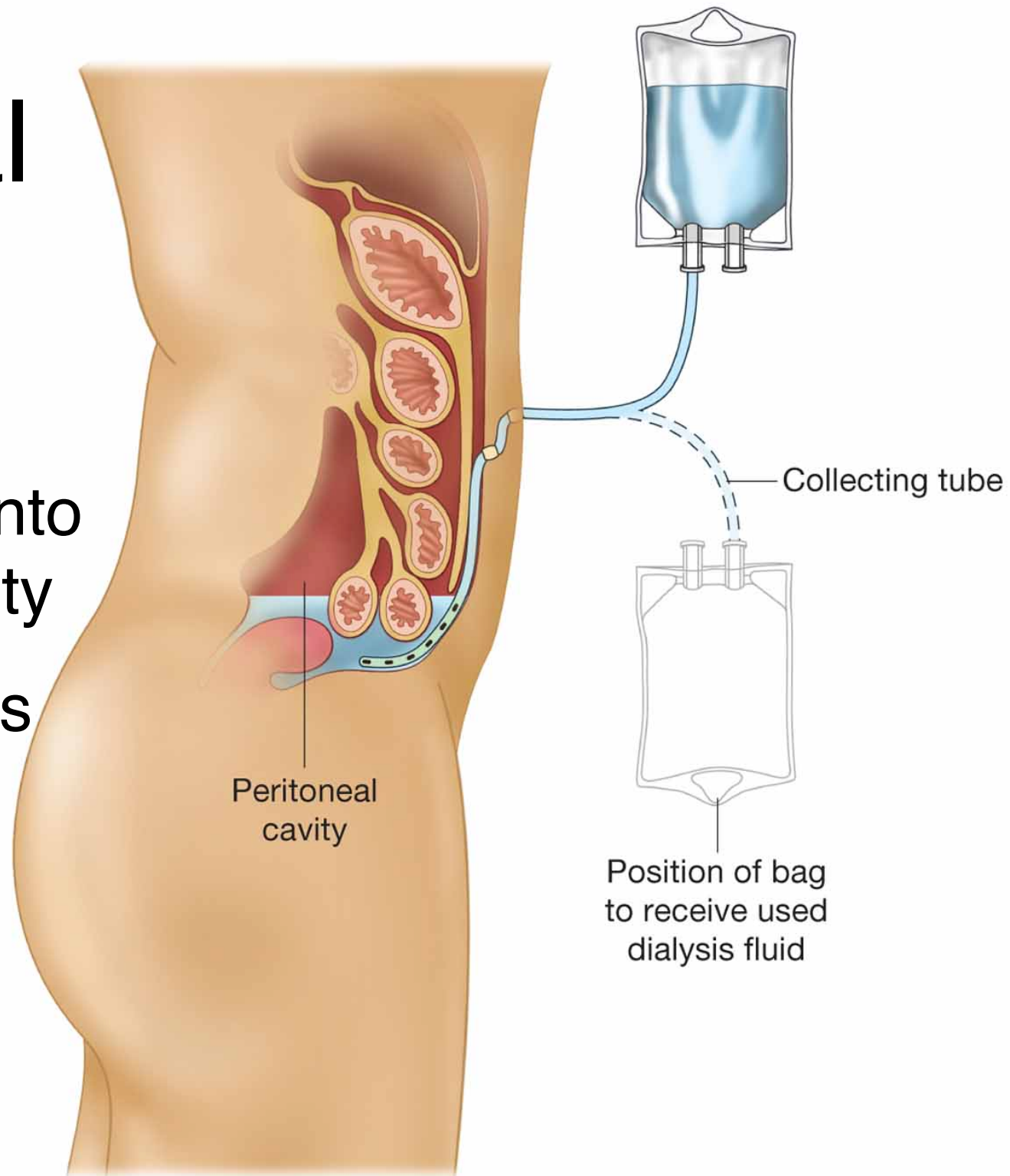
# Hemodialysis

- Blood taken out of the body, passed through dialysis machine.
- AV fistula or AV graft
- Waste products removed, electrolytes balanced



# Peritoneal Dialysis

- Dialysate put into peritoneal cavity
- Waste products absorbed into dialysate



# Missed Dialysis?

- Missing dialysis = BAD
- Fluid volume overload
- Electrolyte disturbances
  - high potassium = cardiac rhythm disturbances
- Acid/base disturbances



# AV Fistula/Graft Bleeding?

- Direct pressure
- Hemostatic dressings
- TQ not so much



# Other Problems

- Infections at access site
  - peritonitis
- Hypotension during dialysis