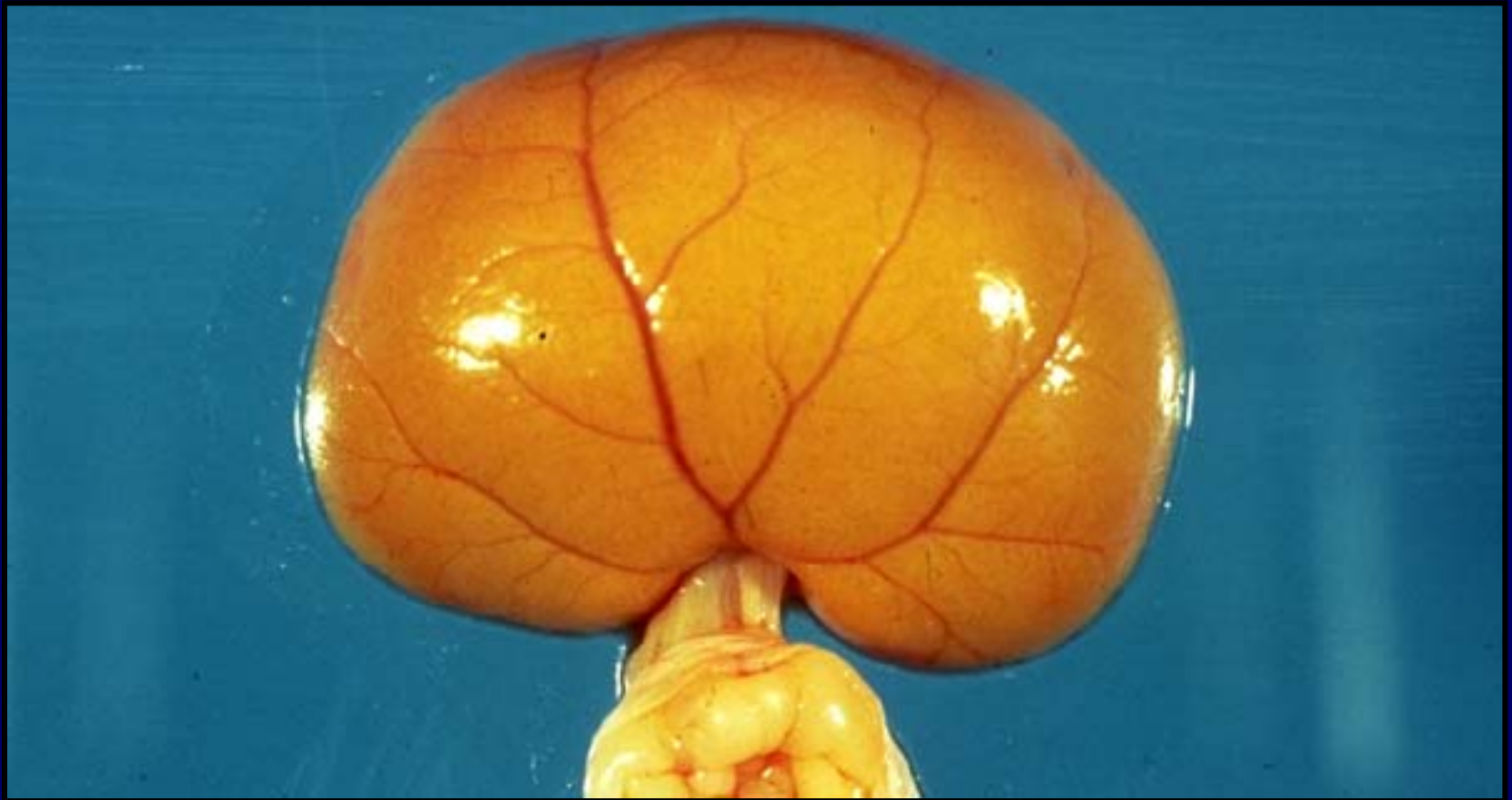
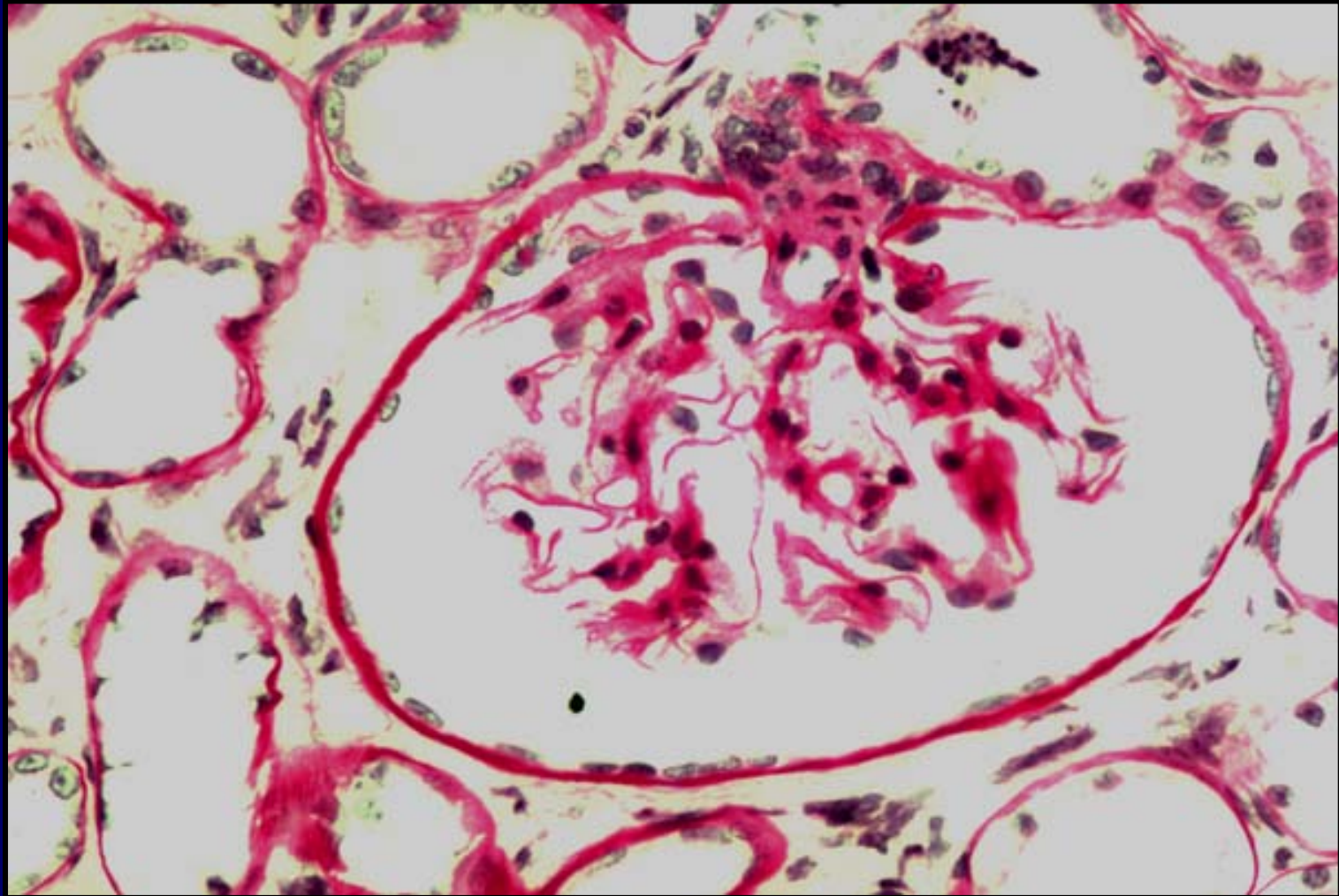


Circulatory Disorders of the Kidneys

Normal renal function requires high blood supply and adequate glomerular filtration pressure

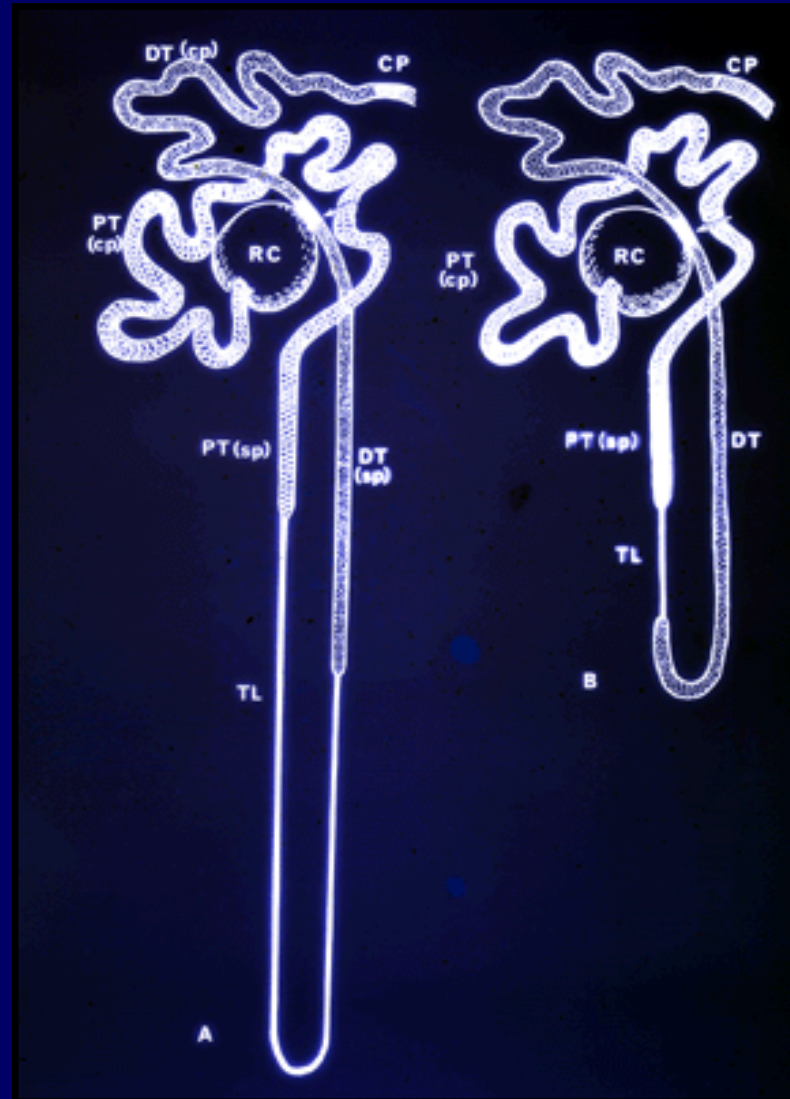


Normal glomerulus in a cat (PAS stain to highlight the glomerular basement membrane)

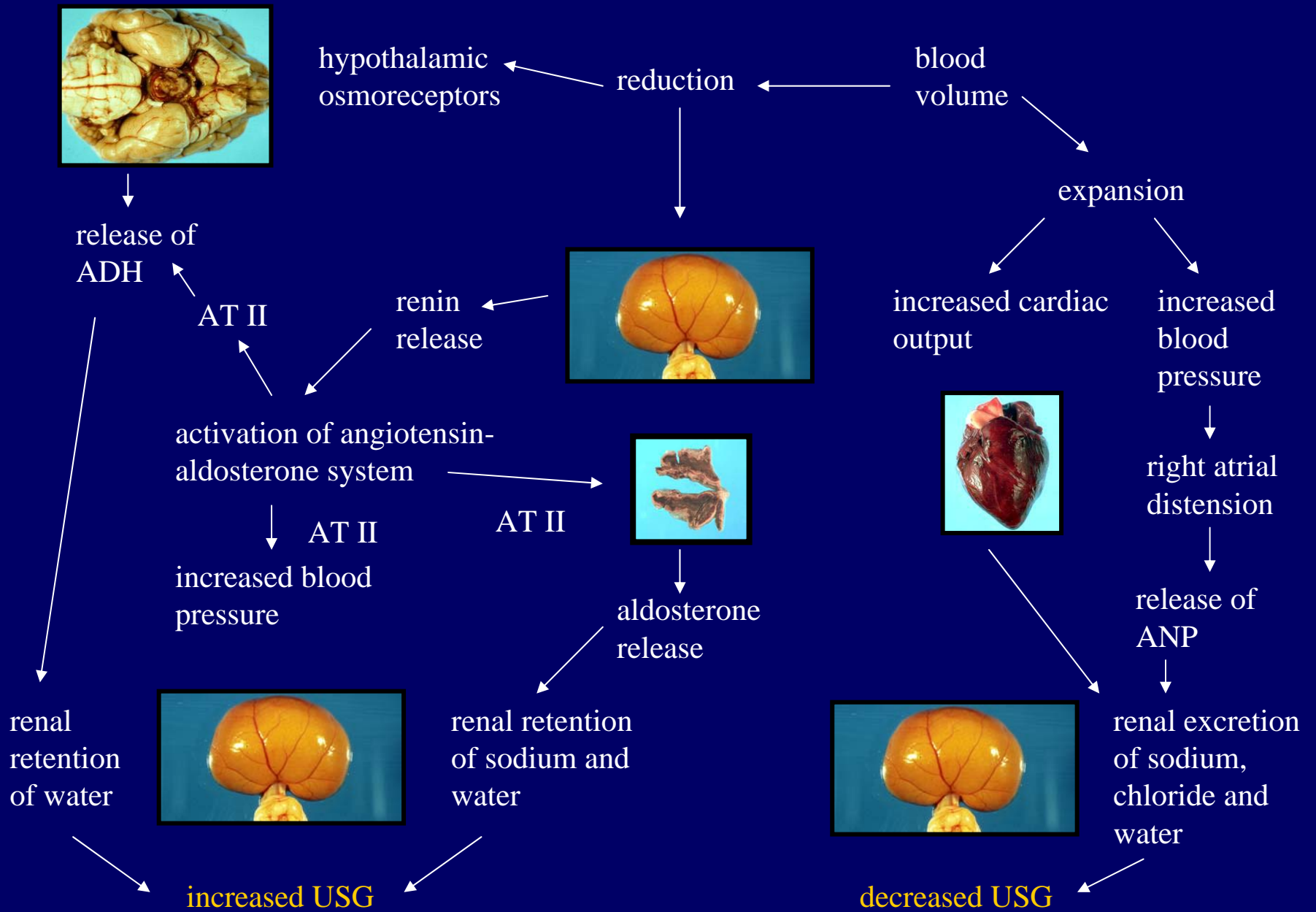


In conditions of systemic hypotension or hypovolaemia, blood is preferentially shunted to juxtamedullary nephrons

Juxtamedullary nephron



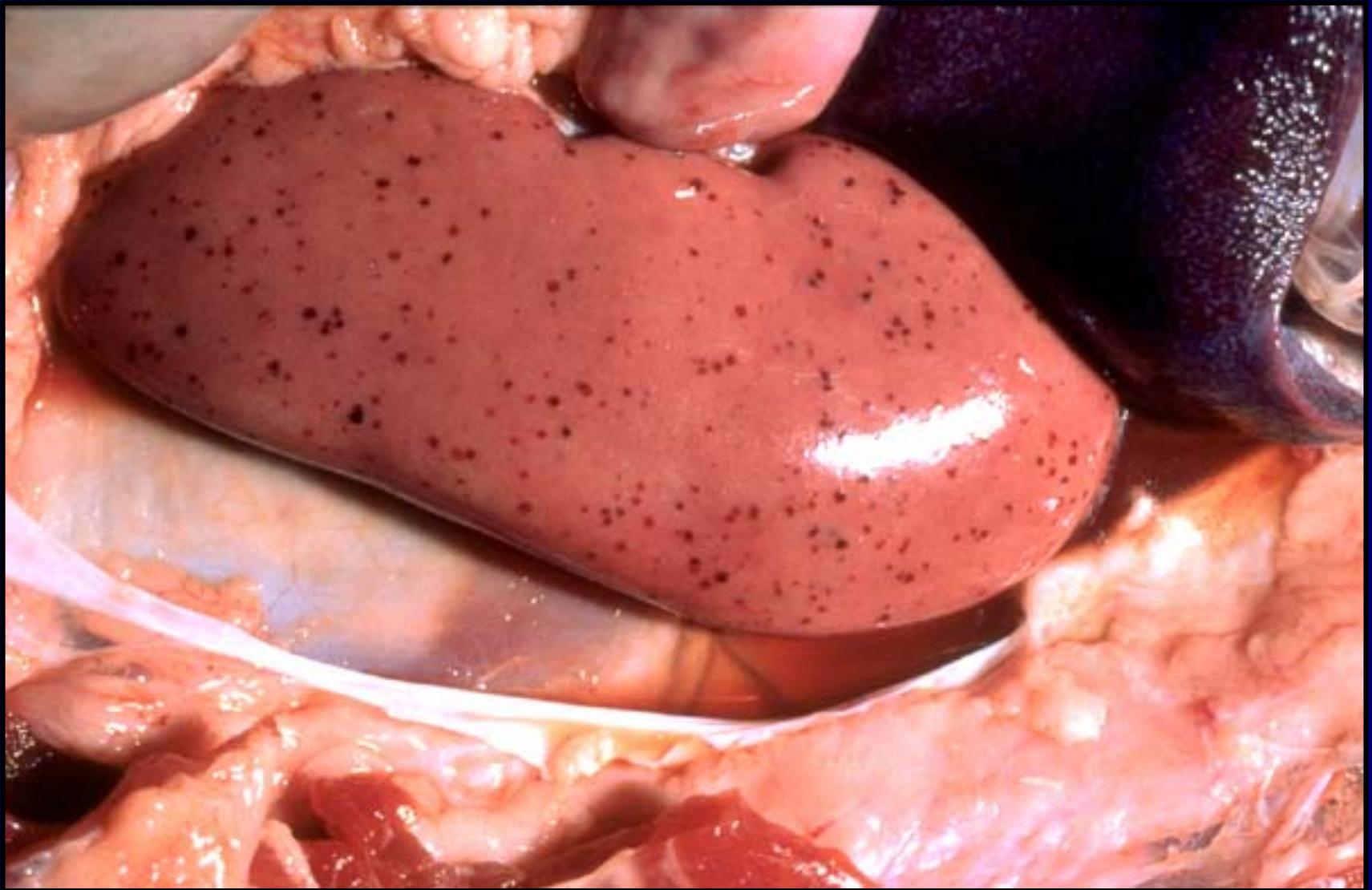
Outer cortical nephron



Cat – multifocal renal haemorrhages due to bacteraemia



Pig – renal cortical petechiae in African swine fever



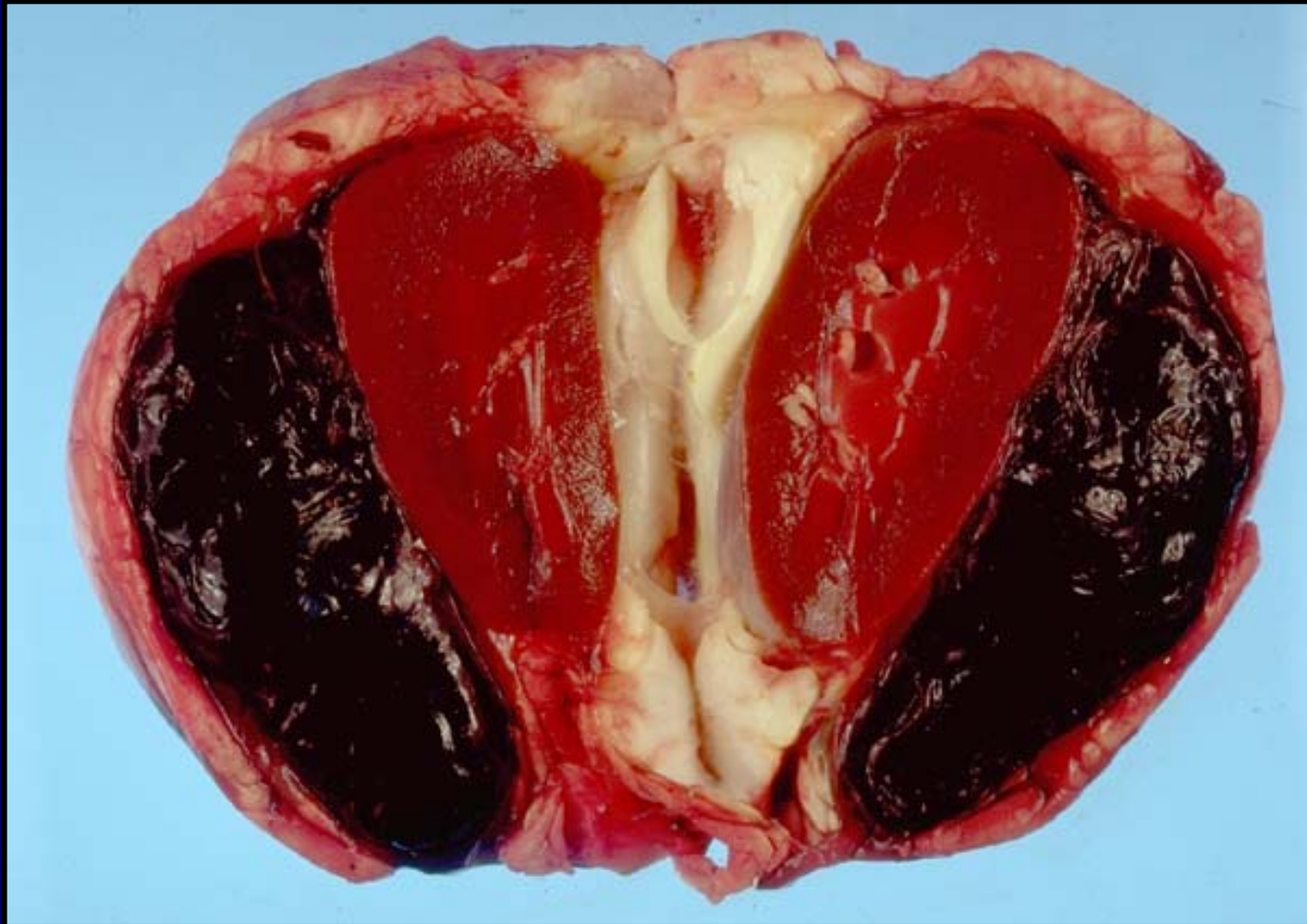
Pup - neonatal canine herpesvirus infection - multifocal renal petechiae



Cat - fatal haemorrhage following renal biopsy



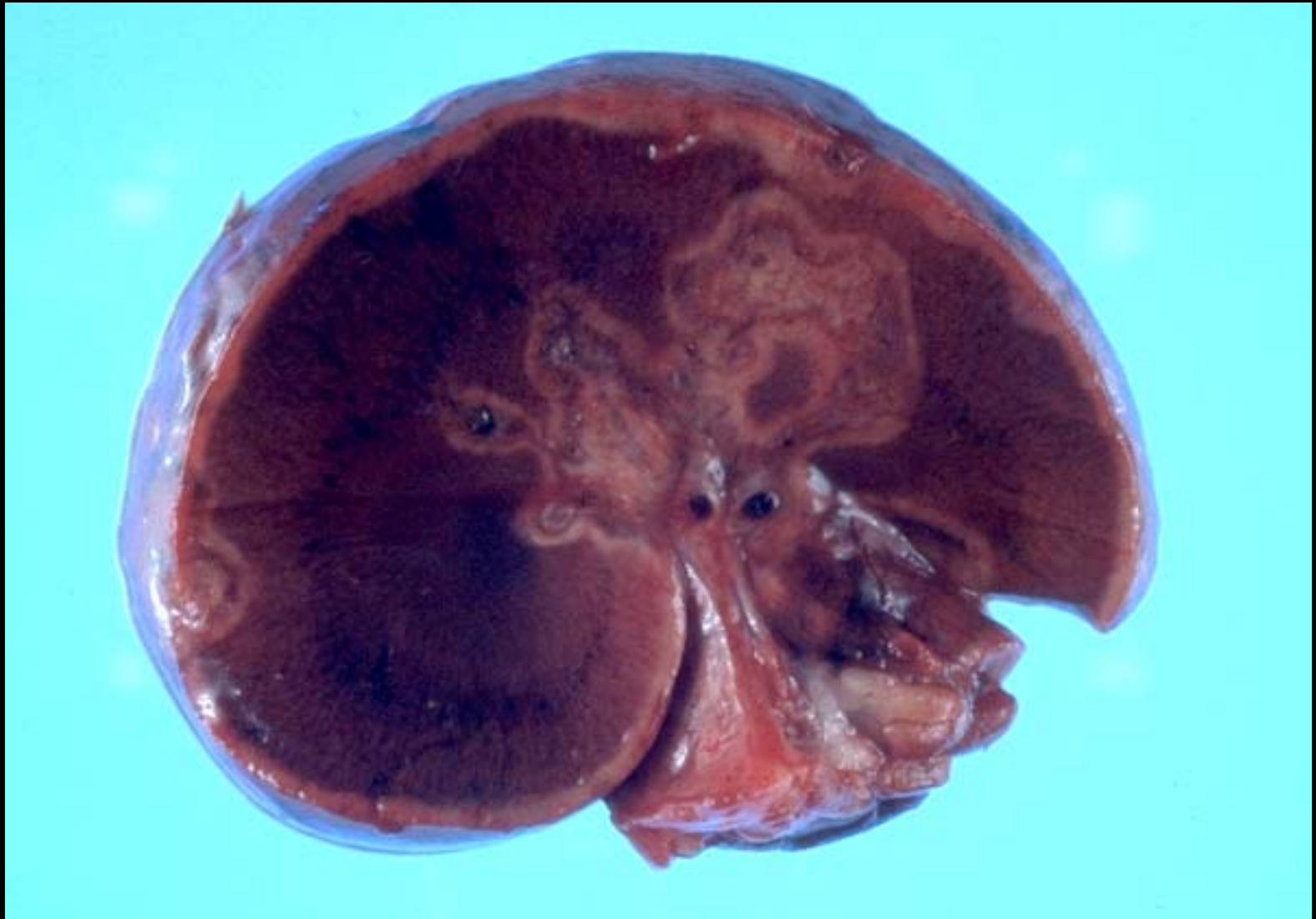
Lamb - perirenal (subcapsular) traumatic haematoma





Cat - haemorrhagic
renal infarction due
to renal vein
thrombosis

Dog - subtotal renal infarction (minimal collateral supply via capsular and parahilar vessels)

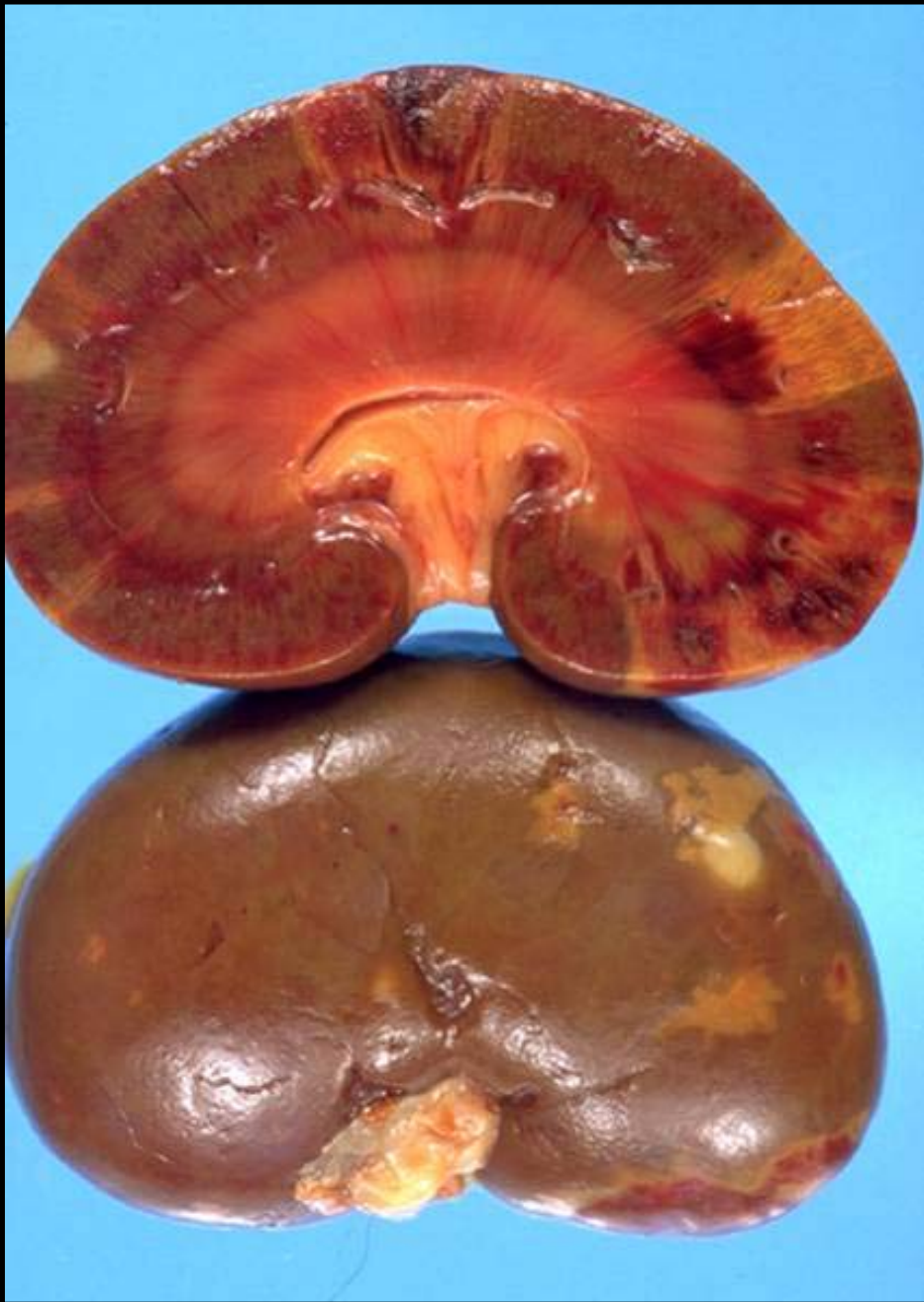


Dog - subacute renal infarct



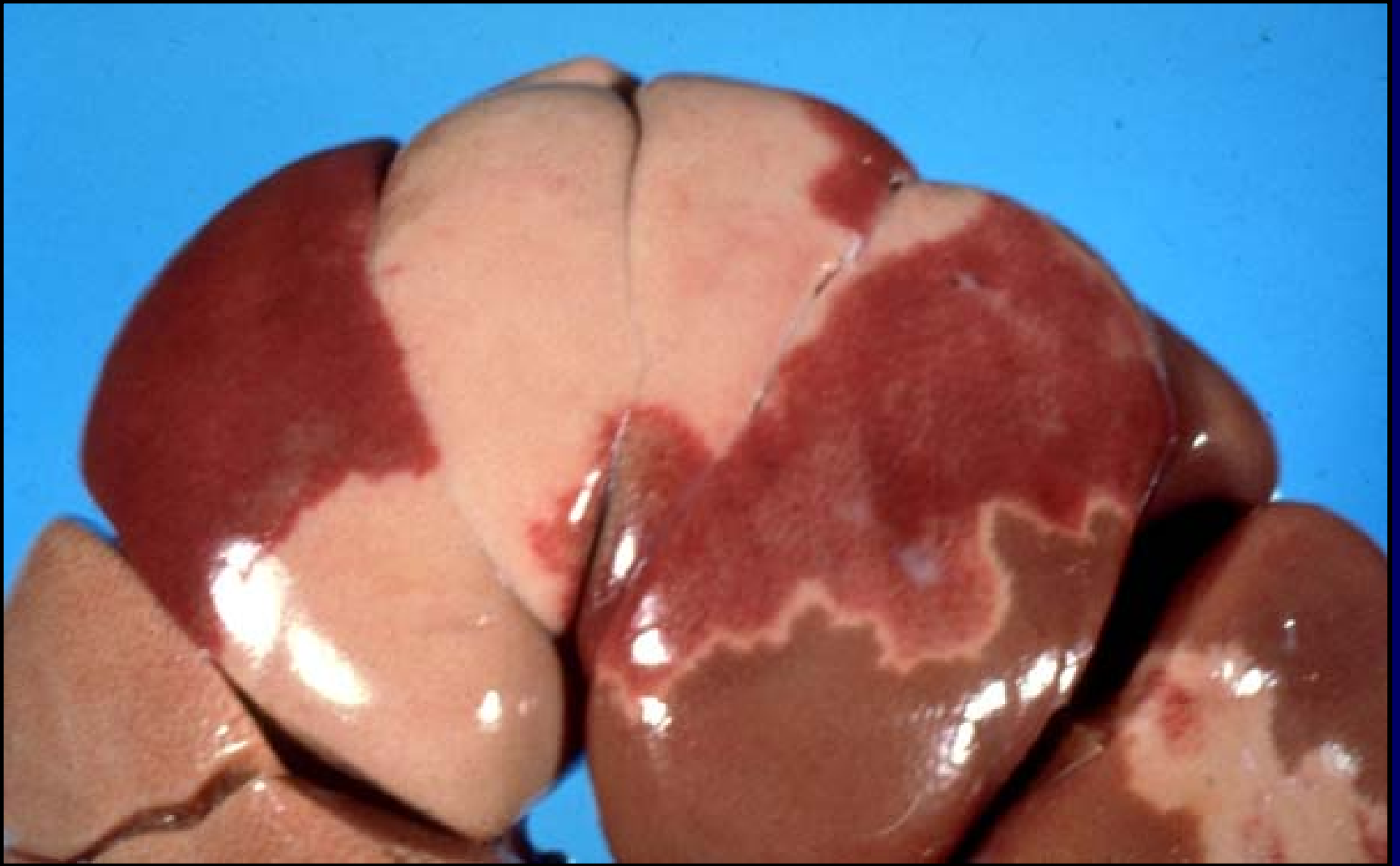
Human – subacute renal infarct



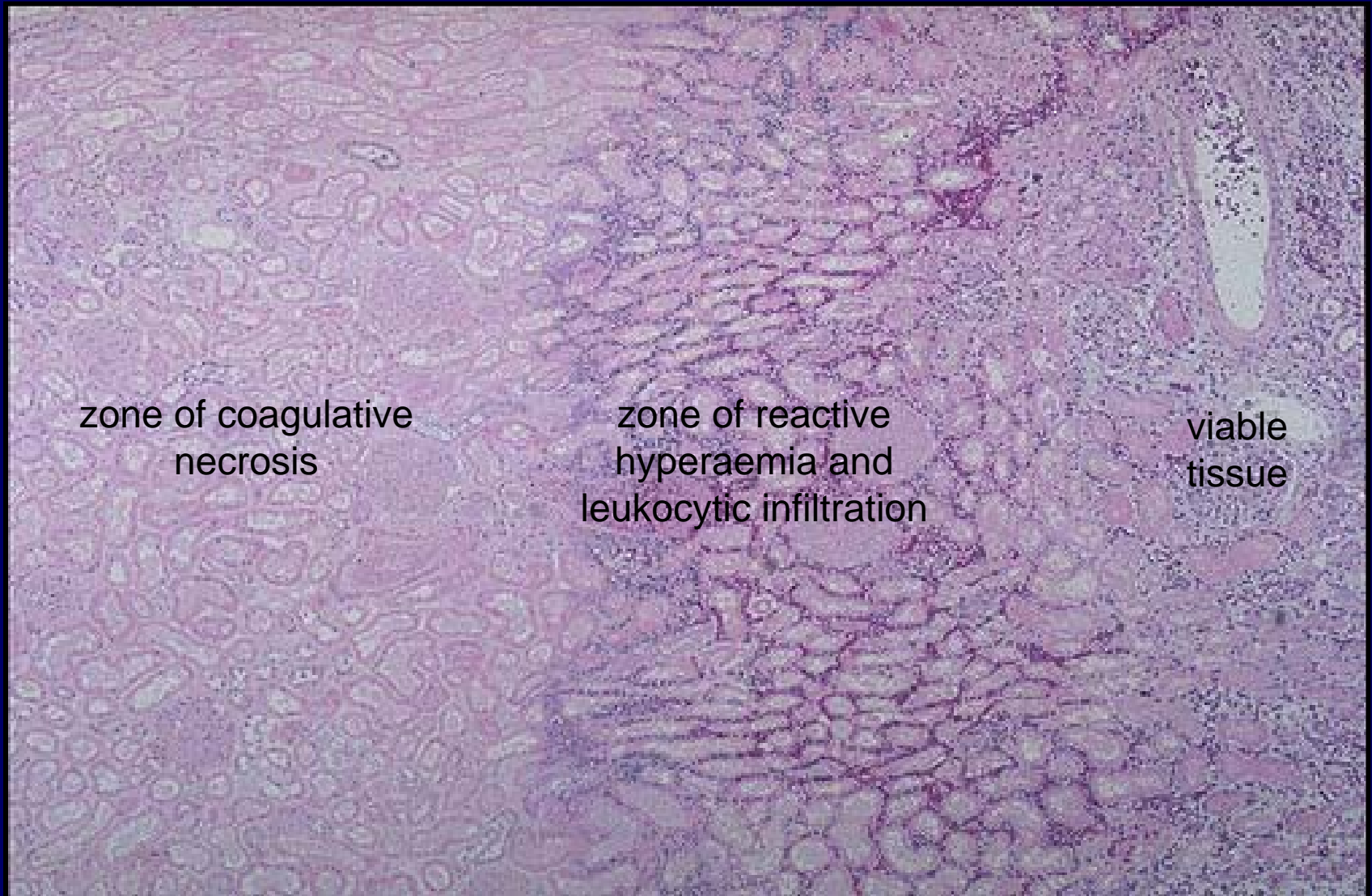


Dog with vegetative
endocarditis - acute,
subacute and chronic
renal infarcts

Cow - acute and subacute renal infarcts



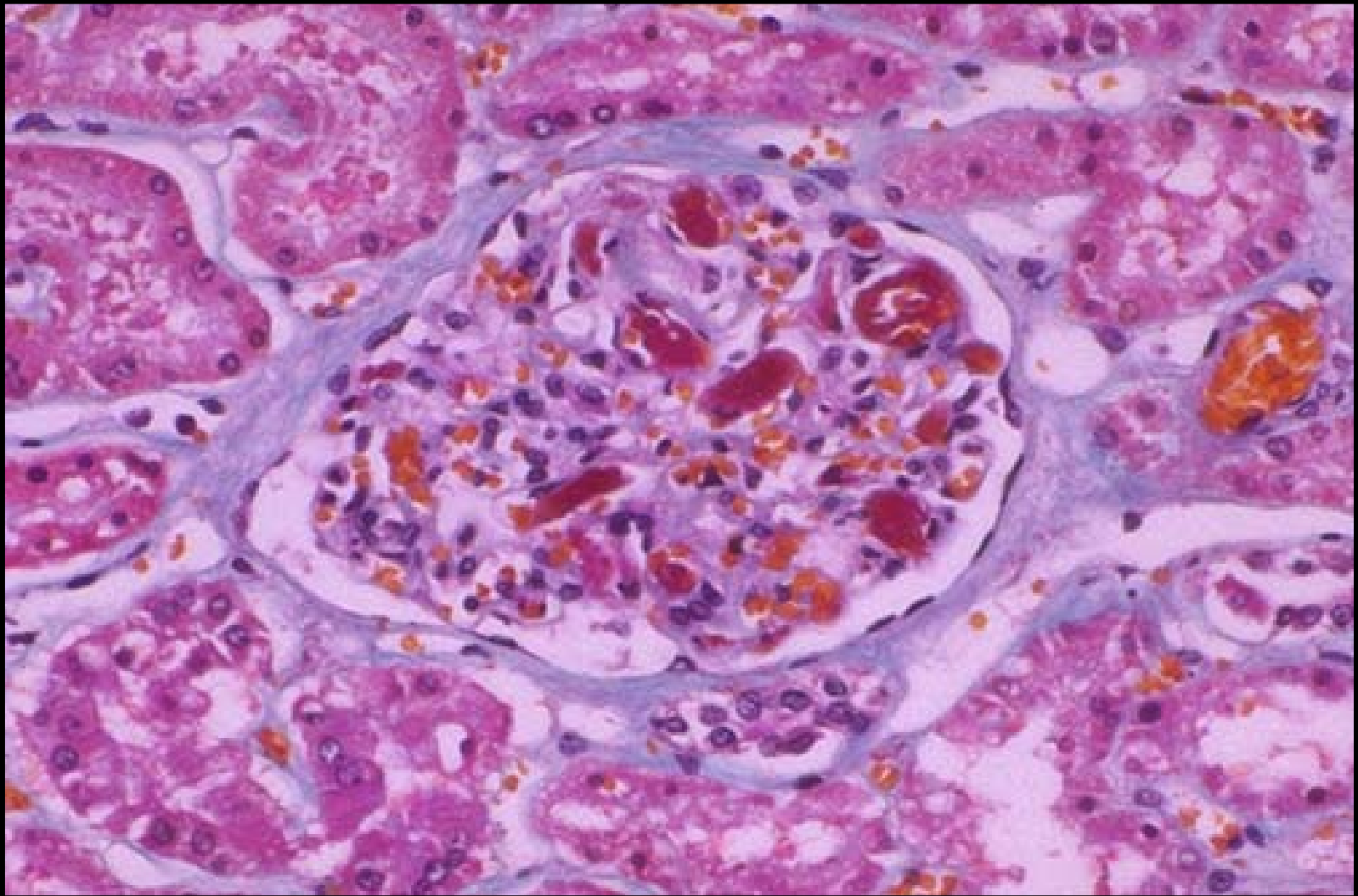
Subacute renal infarction

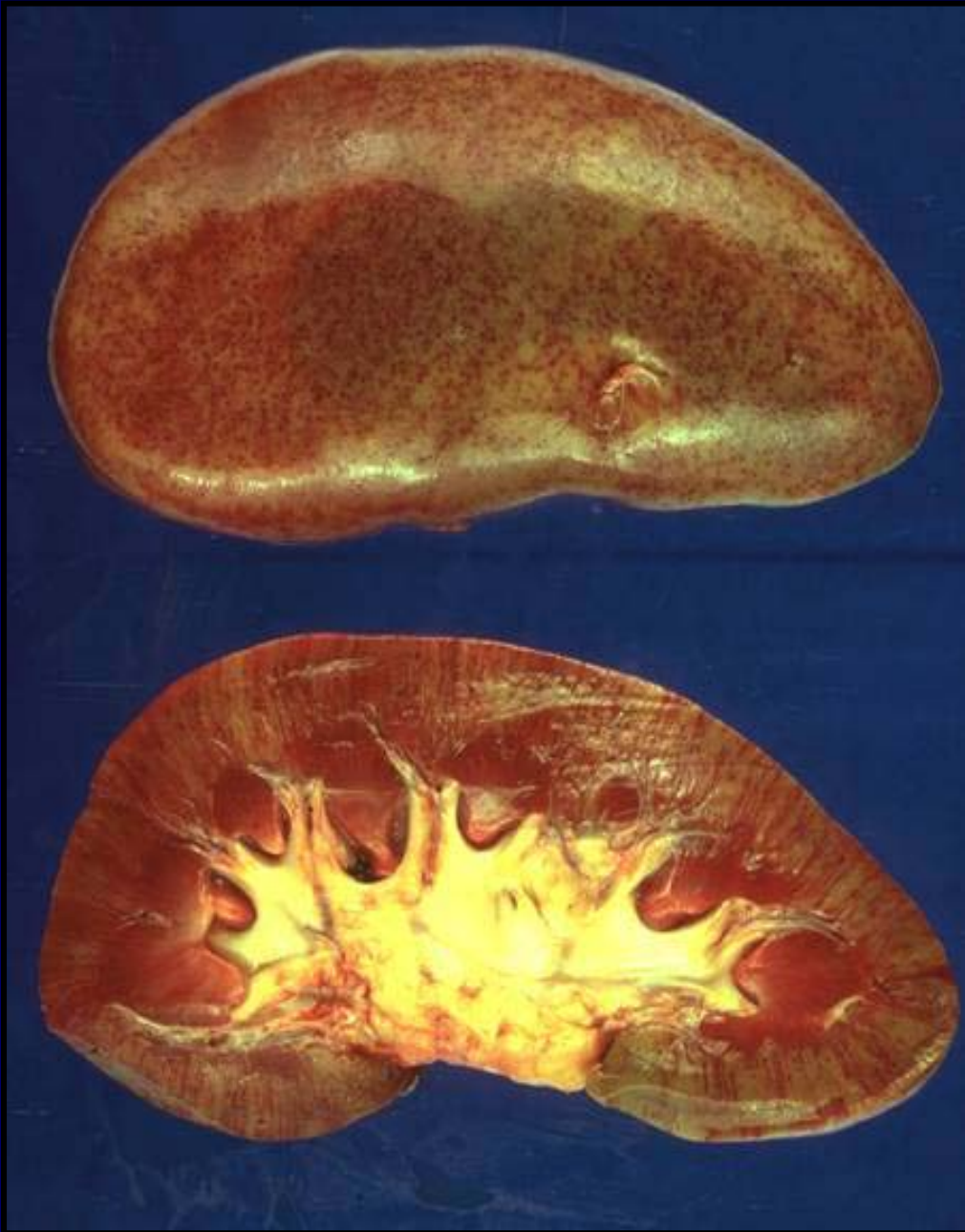


Cow - generalised Shwartzman reaction (acute renal cortical necrosis)



Acute fibrin coagula within glomerular capillaries in acute renal cortical necrosis





**Fig - Shwartzman
reaction (acute renal
cortical necrosis)**

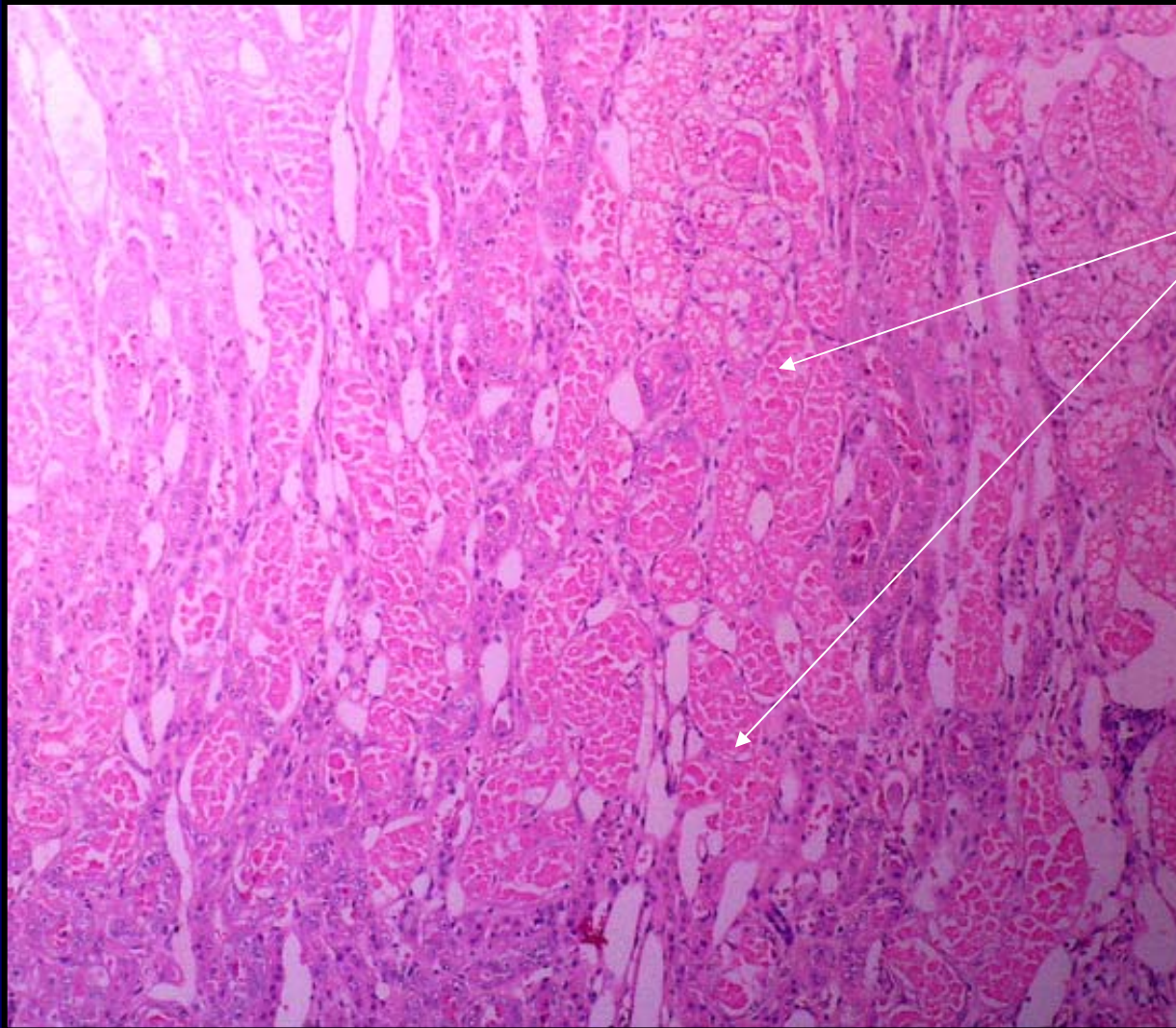
Dog - ischaemic nephrosis - shock kidney



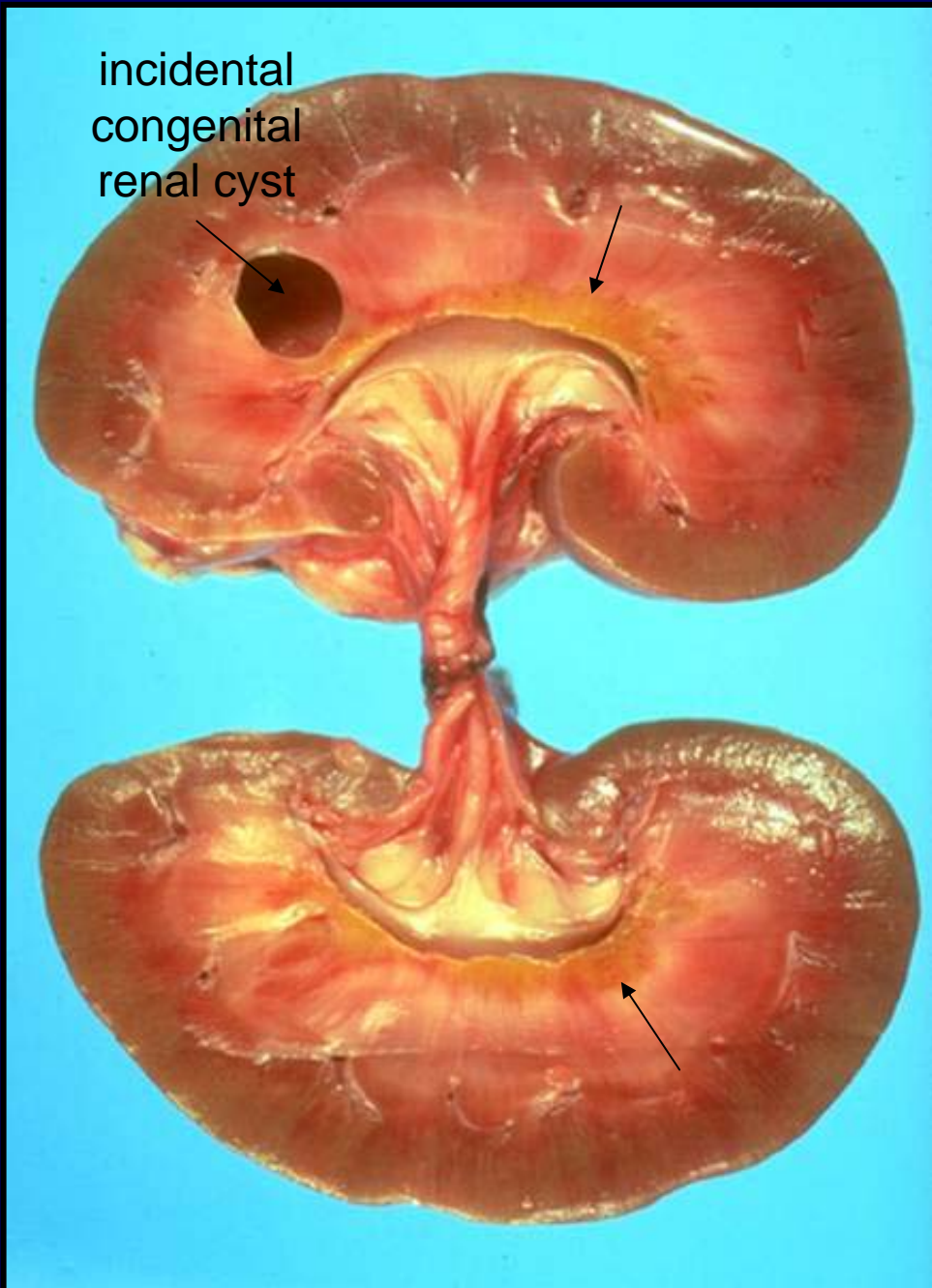
Horse - ischaemic nephrosis - shock kidney



Cat - ischaemic nephrosis



coagulative
necrosis of
proximal tubules



**Dog - renal papillary
necrosis (NSAID
toxicity)**

Horse - renal papillary necrosis (NSAID toxicity)



Dog - renal papillary necrosis and reparative fibrosis





Dog -
hydronephrosis

Dog – chronic
hydronephrosis
and hydroureter



Pig – severe chronic hydronephrosis



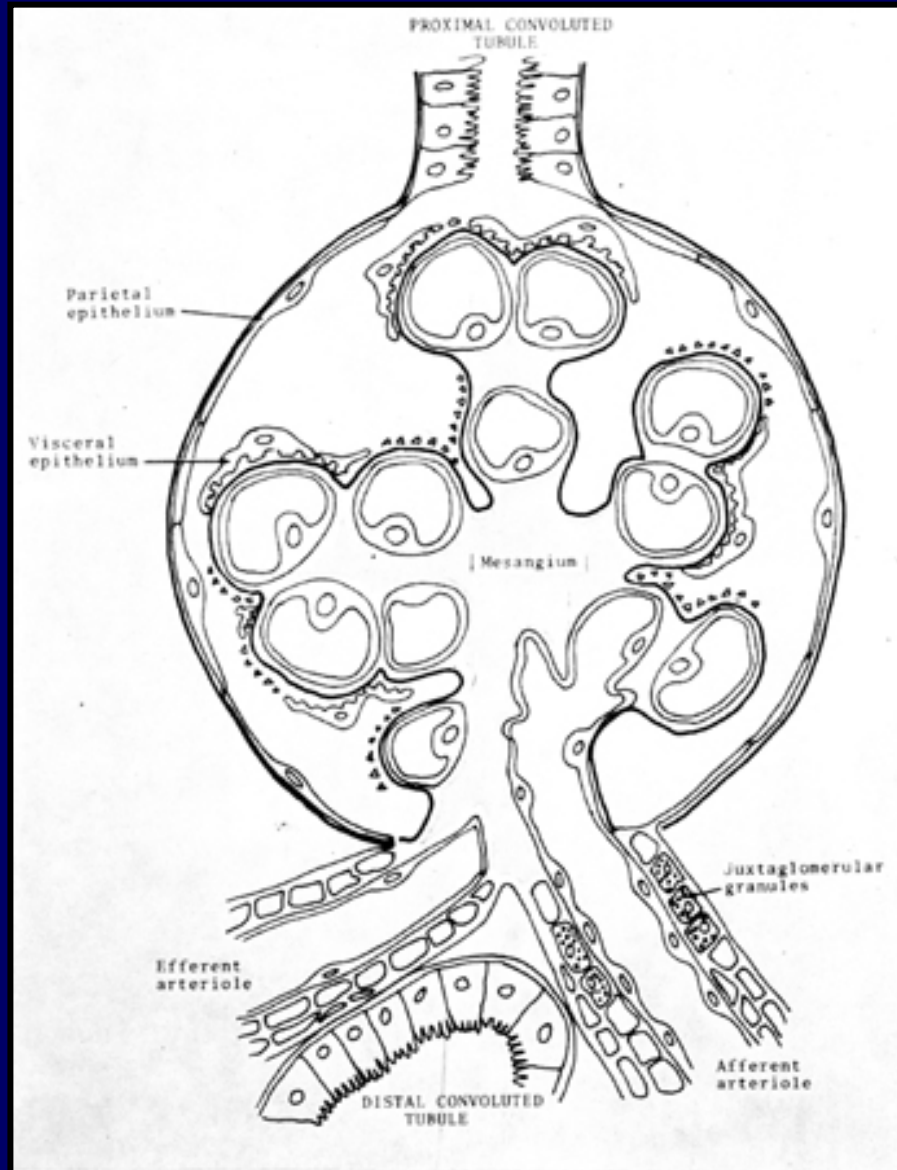
Sheep – bilateral asymmetric hydronephrosis



Cat – severe unilateral hydronephrosis



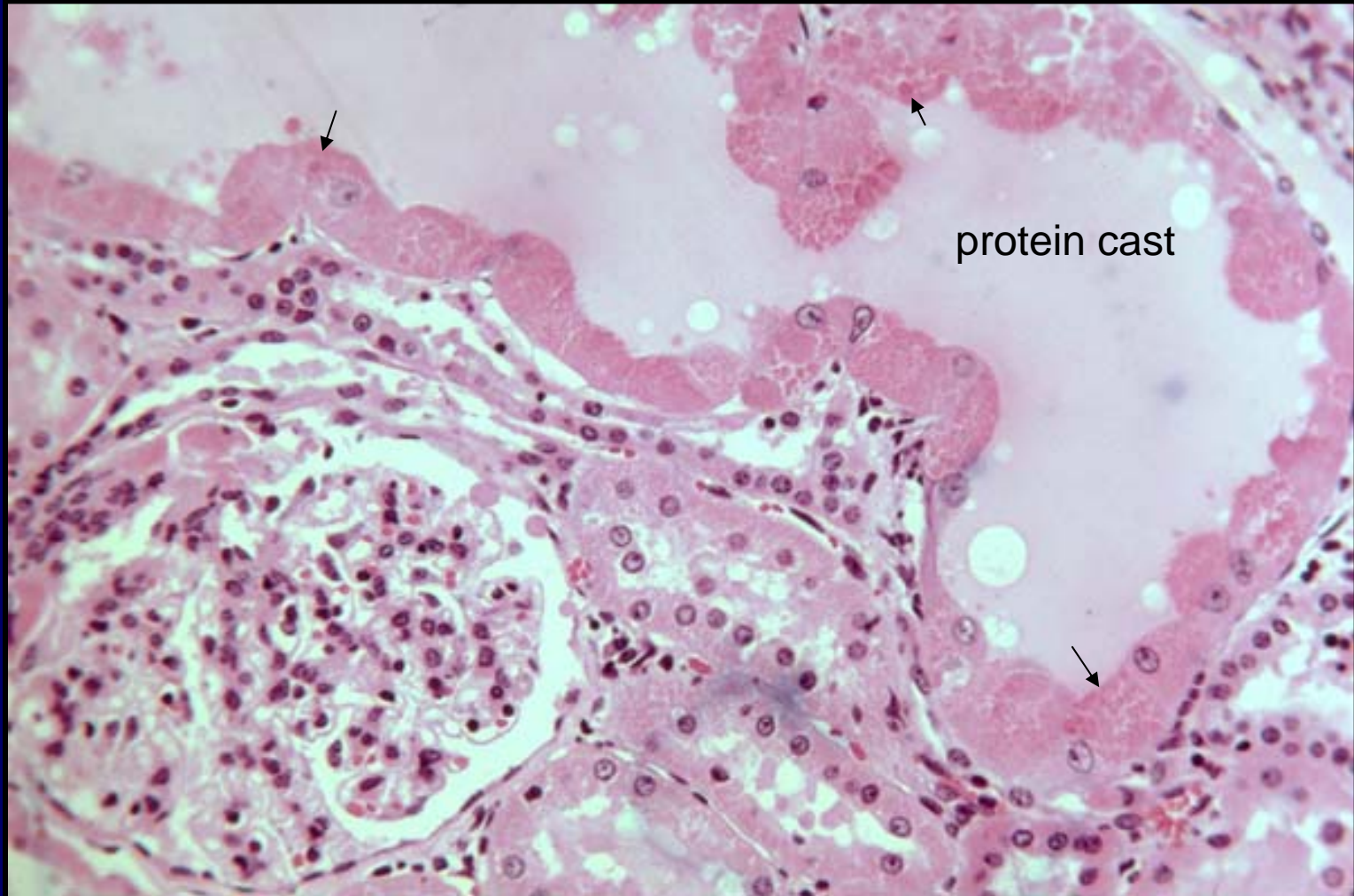
Normal glomerular structure



Proteinuria is the hallmark of glomerular disease



Sheep - glomerulonephritis - note tubular protein cast and hyaline protein droplets in tubular epithelial cells



Dog – distal limb oedema due to protein-losing nephropathy



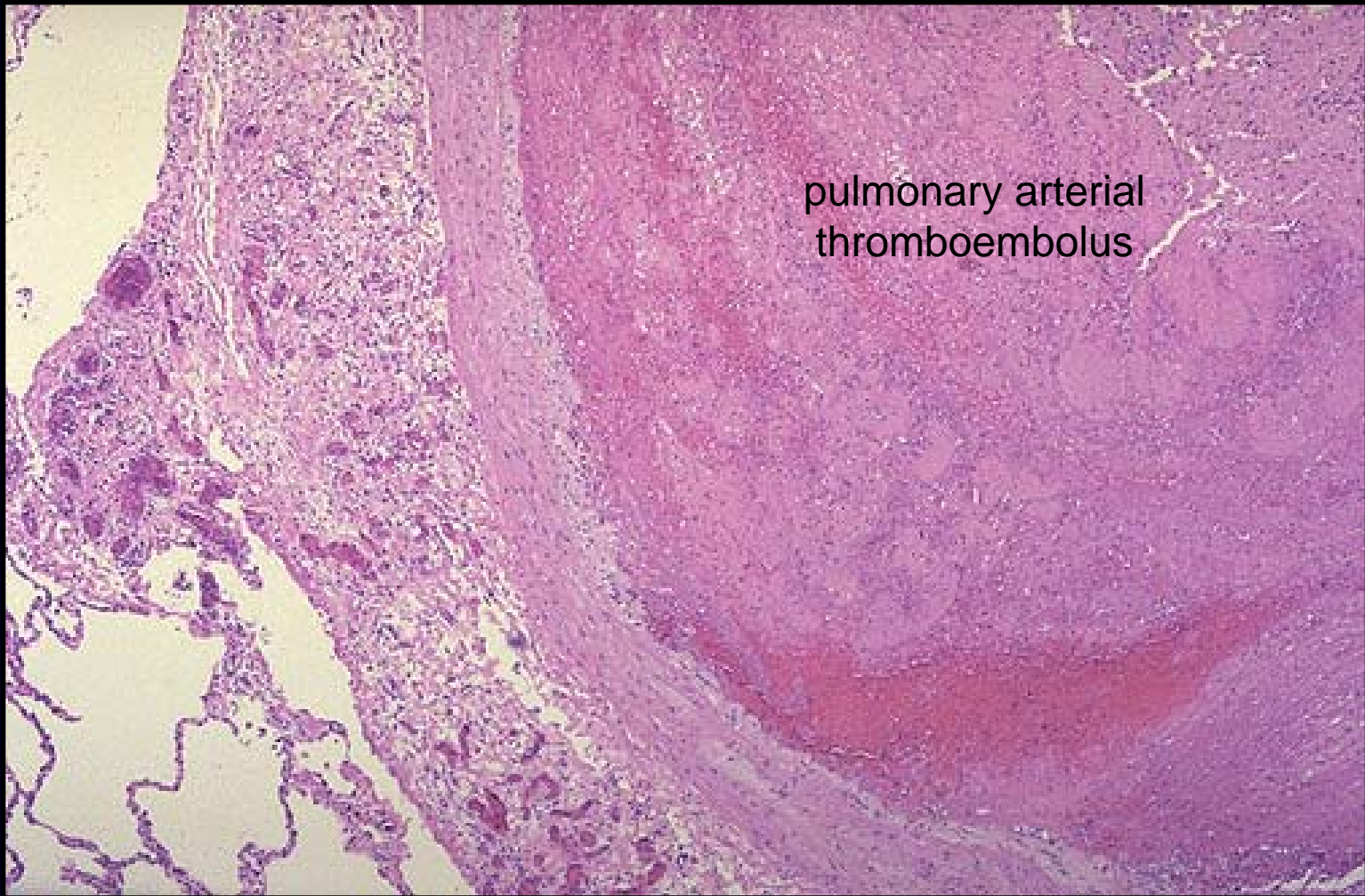
Bull – anasarca due to glomerular amyloidosis





Hypercholesterolaemia
(which may be associated
with plasma lipaemia) is a
feature of the nephrotic
syndrome

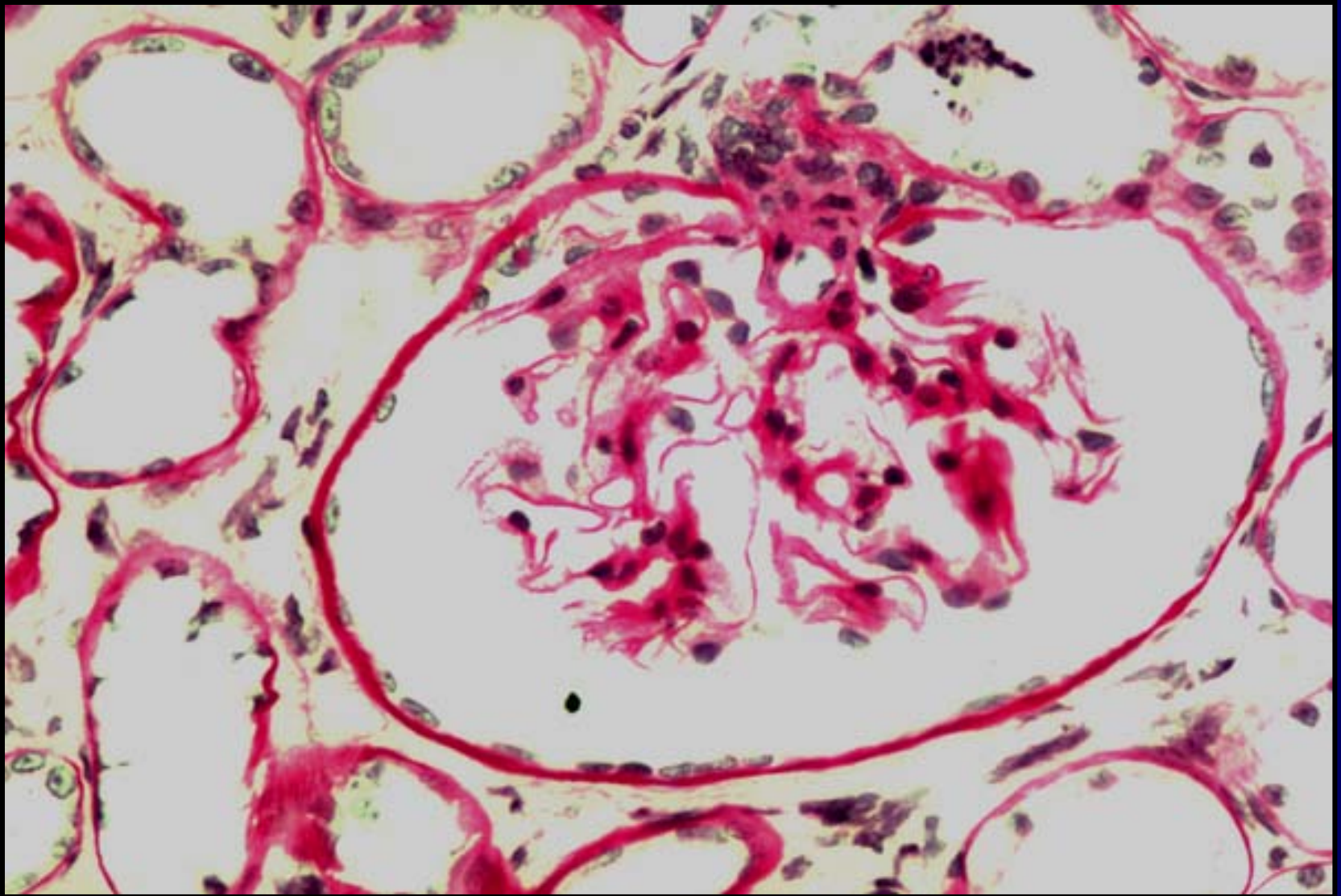
Thrombosis and pulmonary thromboembolism may occur in animals with nephrotic syndrome



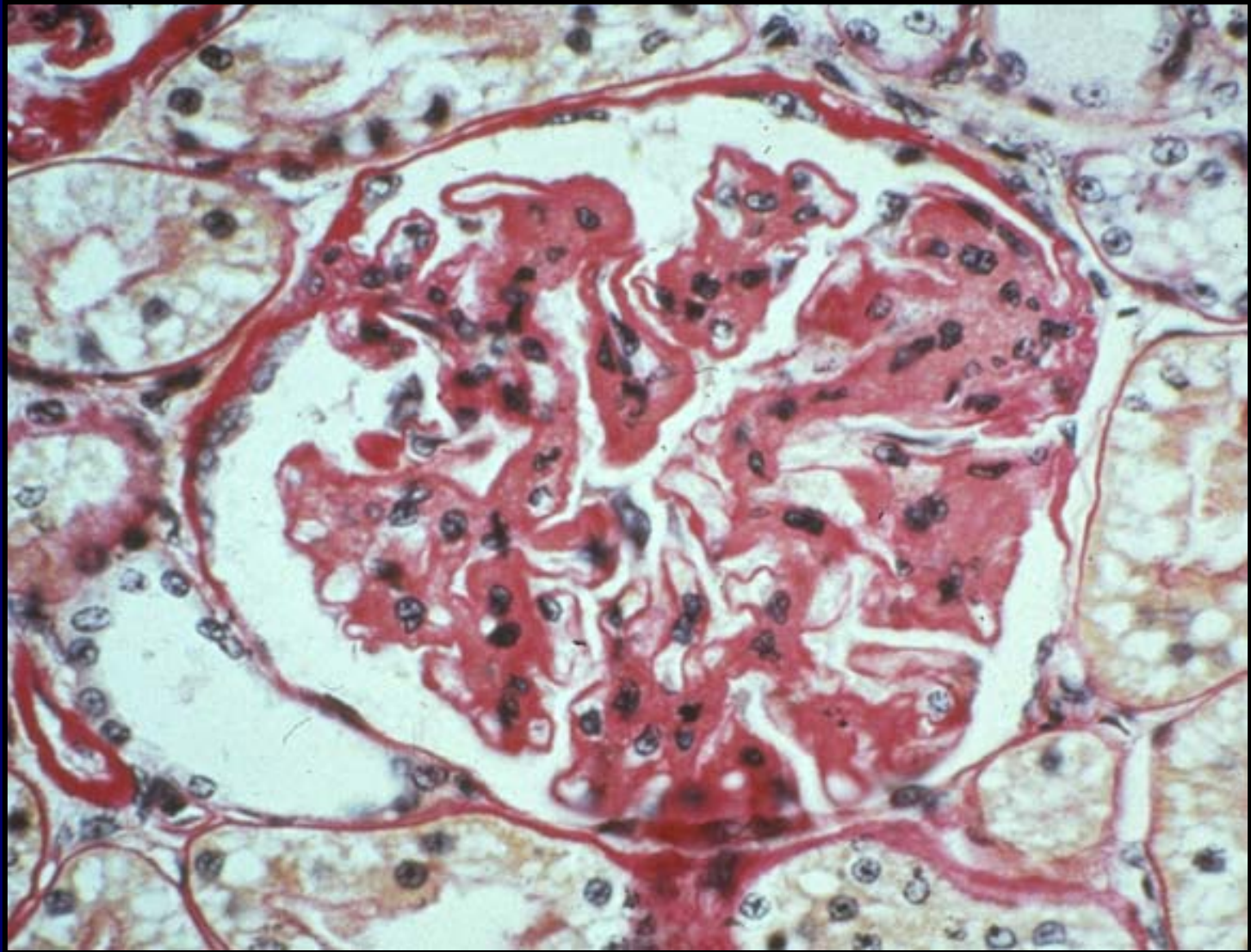
Systemic hypertension and its sequelae are common complications of glomerular disease in dogs and cats



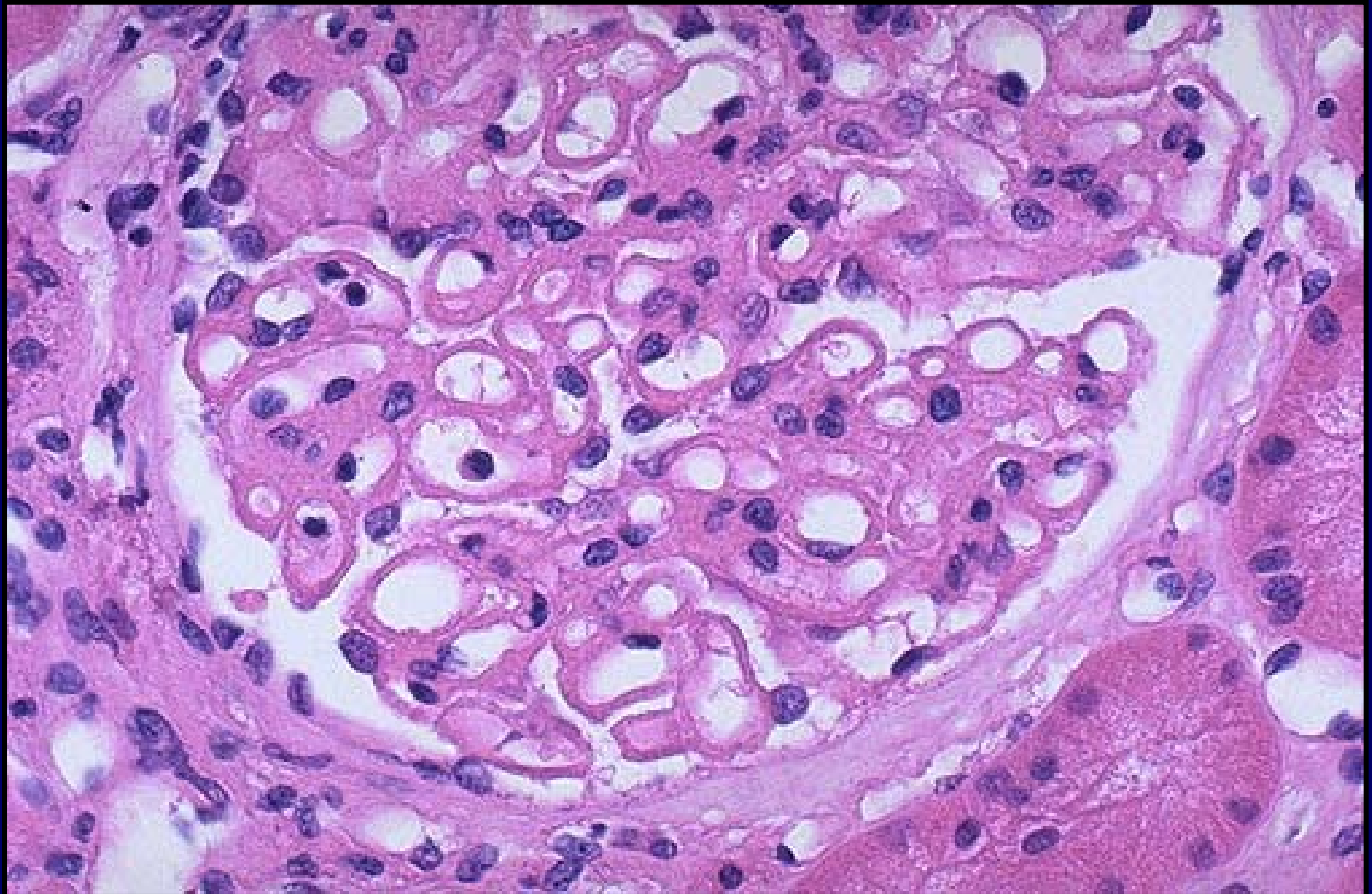
Cat – normal glomerulus – PAS stain



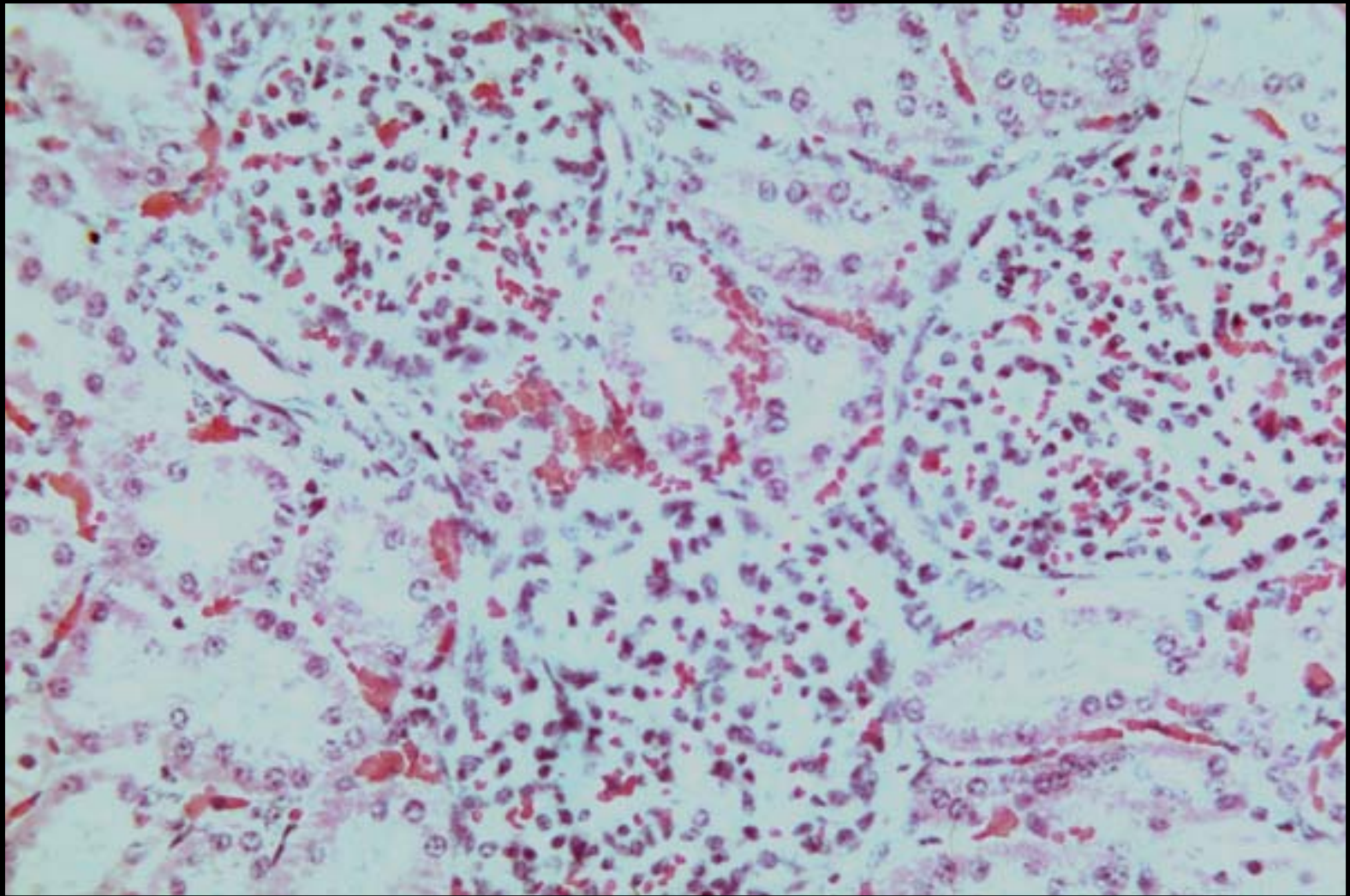
Cat – membranous glomerulonephritis – PAS stain



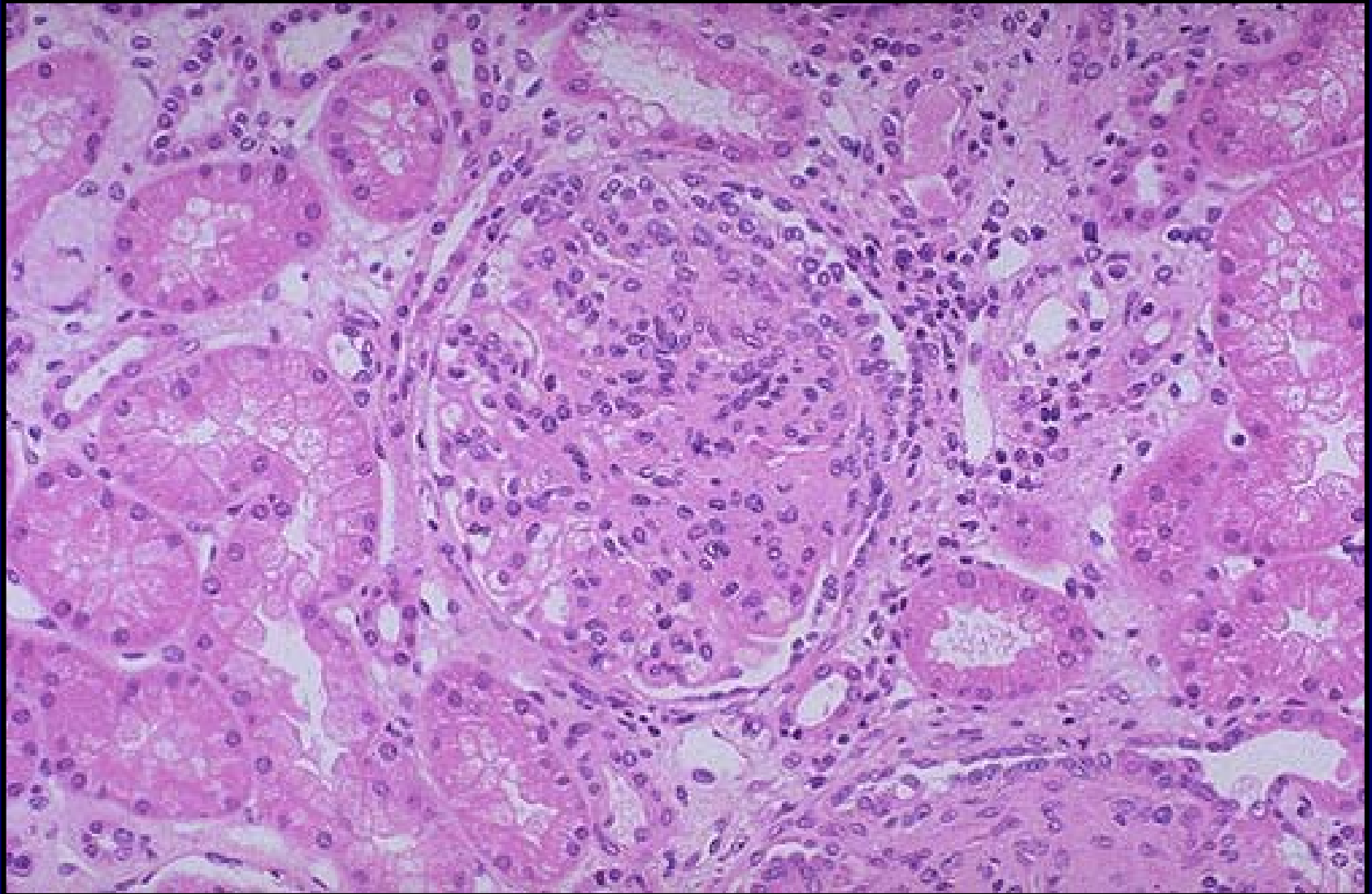
Human – membranous glomerulonephritis



Horse – hypercellular glomeruli in proliferative glomerulonephritis



Human – membranoproliferative glomerulonephritis



Acute glomerulitis in a dog with canine adenovirus 1 infection

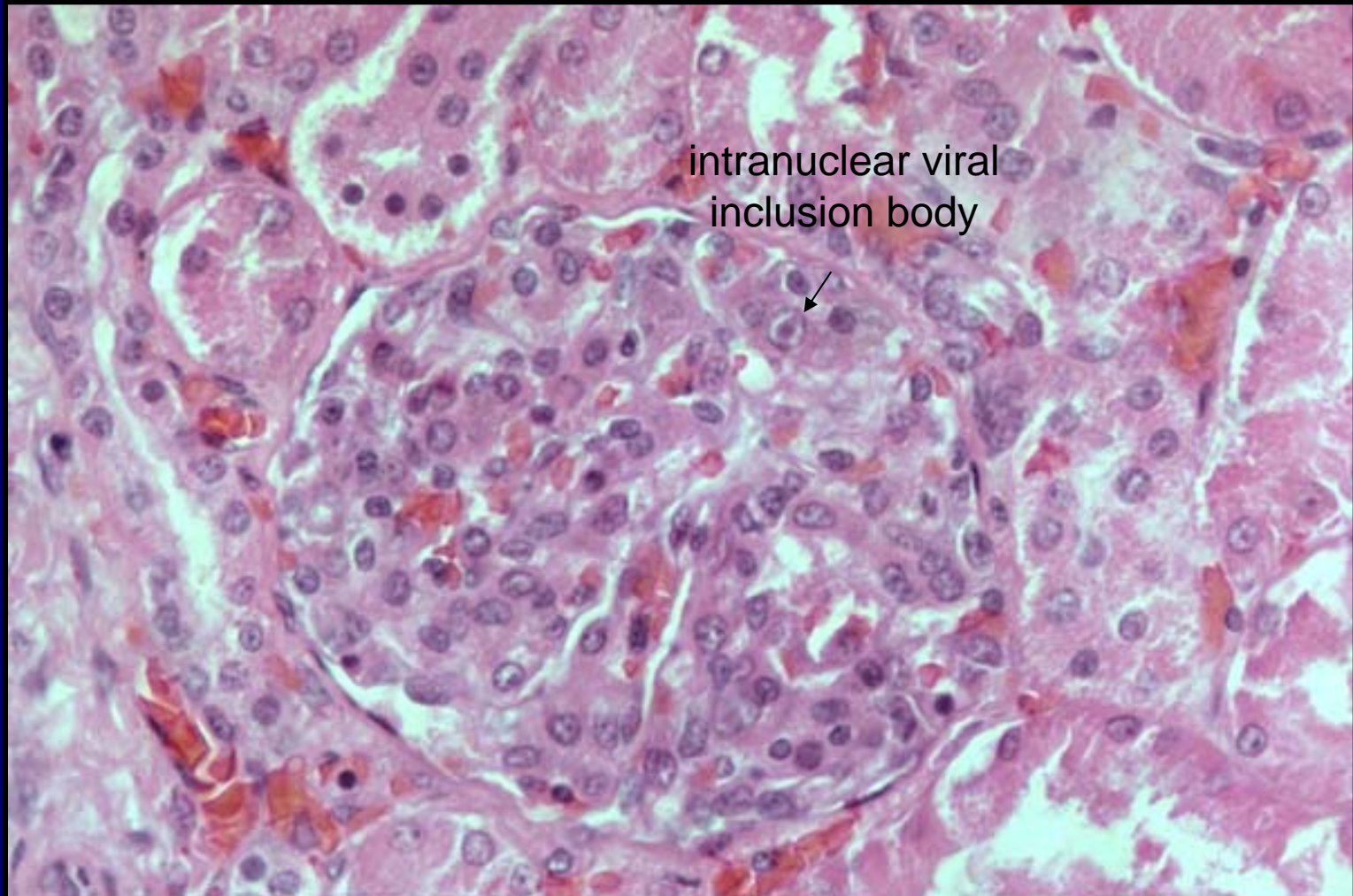
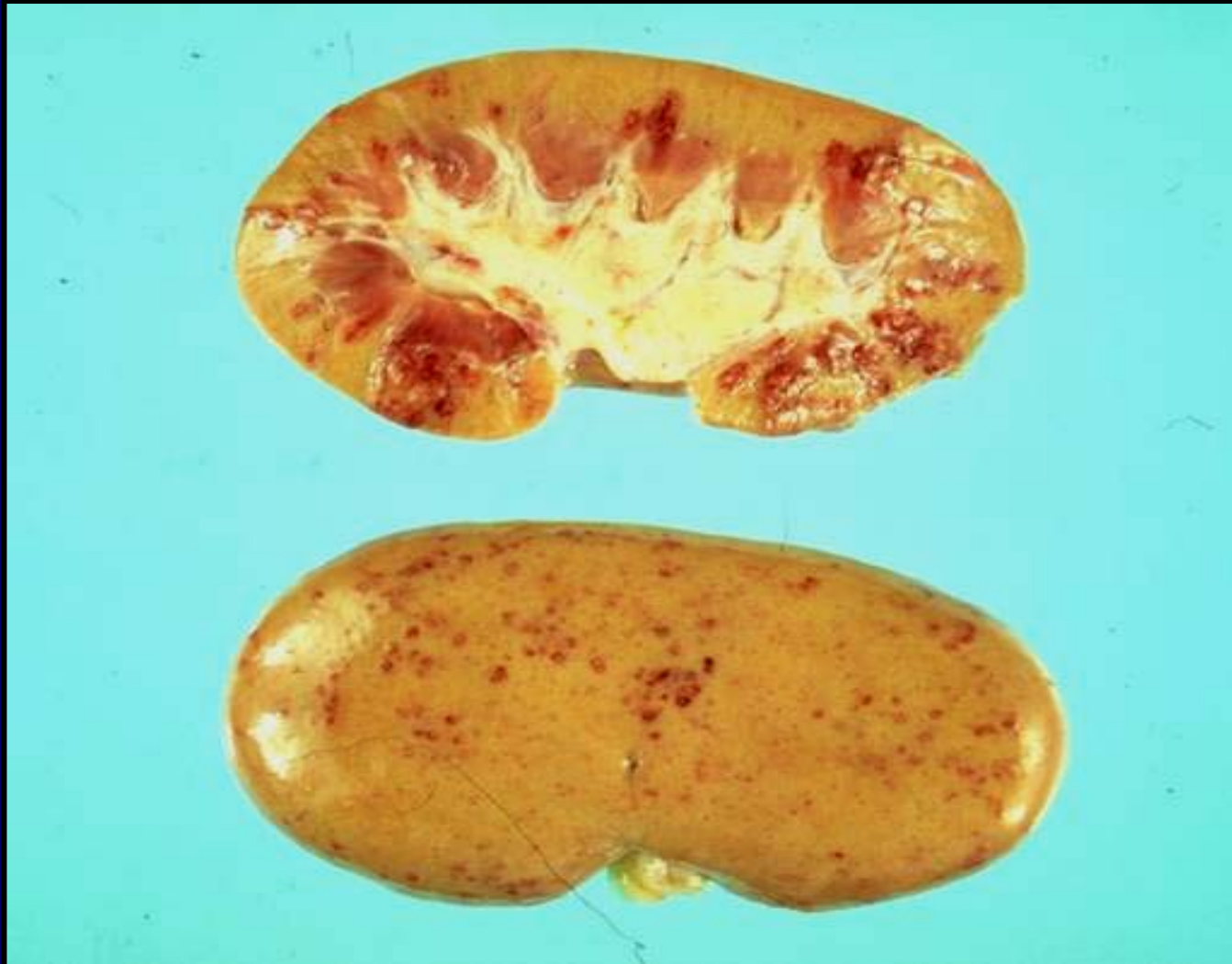


Fig – acute embolic suppurative glomerulitis/nephritis



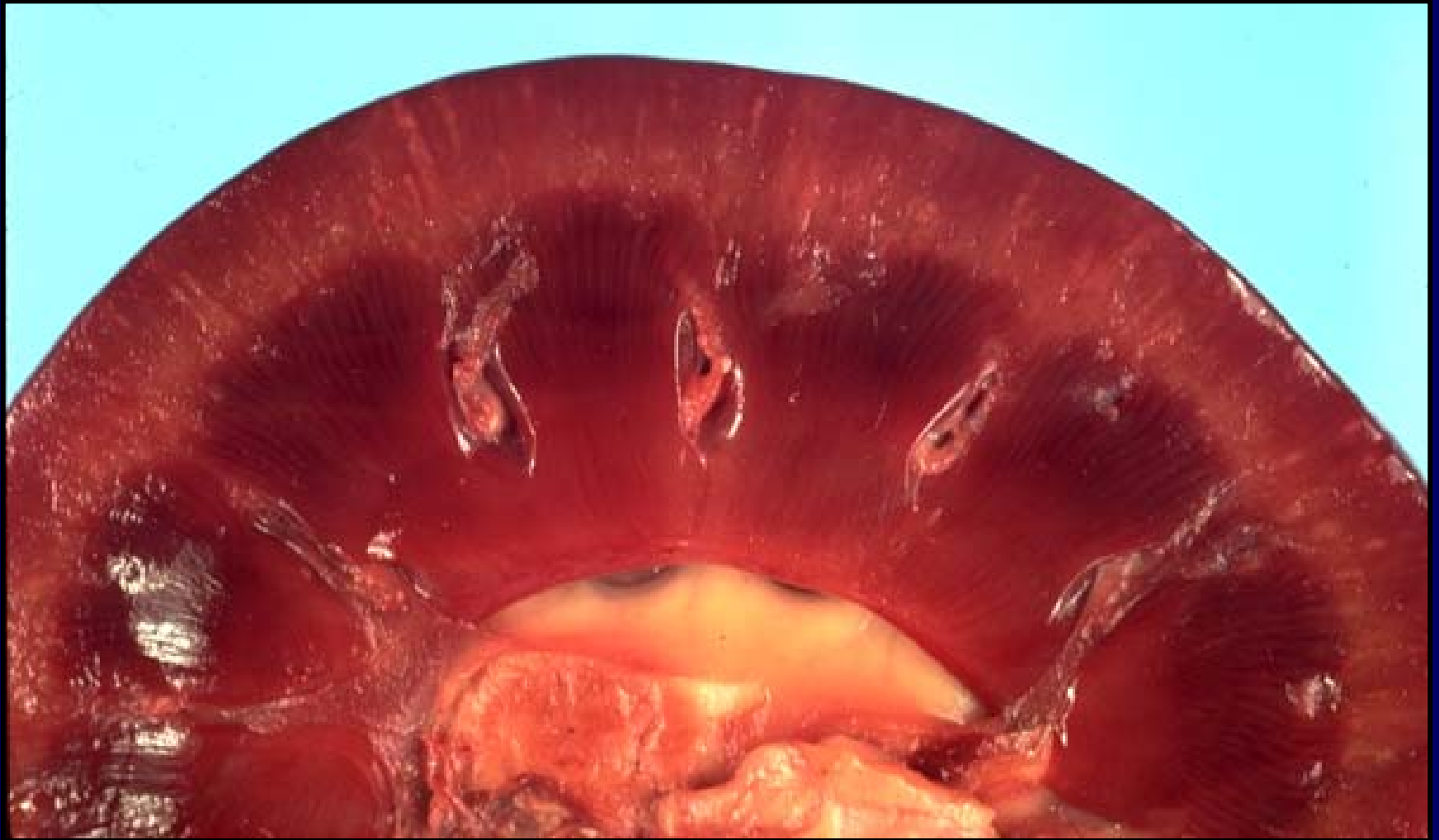
Foal – embolic suppurative glomerulitis/nephritis
(*Actinobacillus equuli* bacteraemia)



Dog – chronic glomerulonephritis – note the granularity of the subcapsular surface



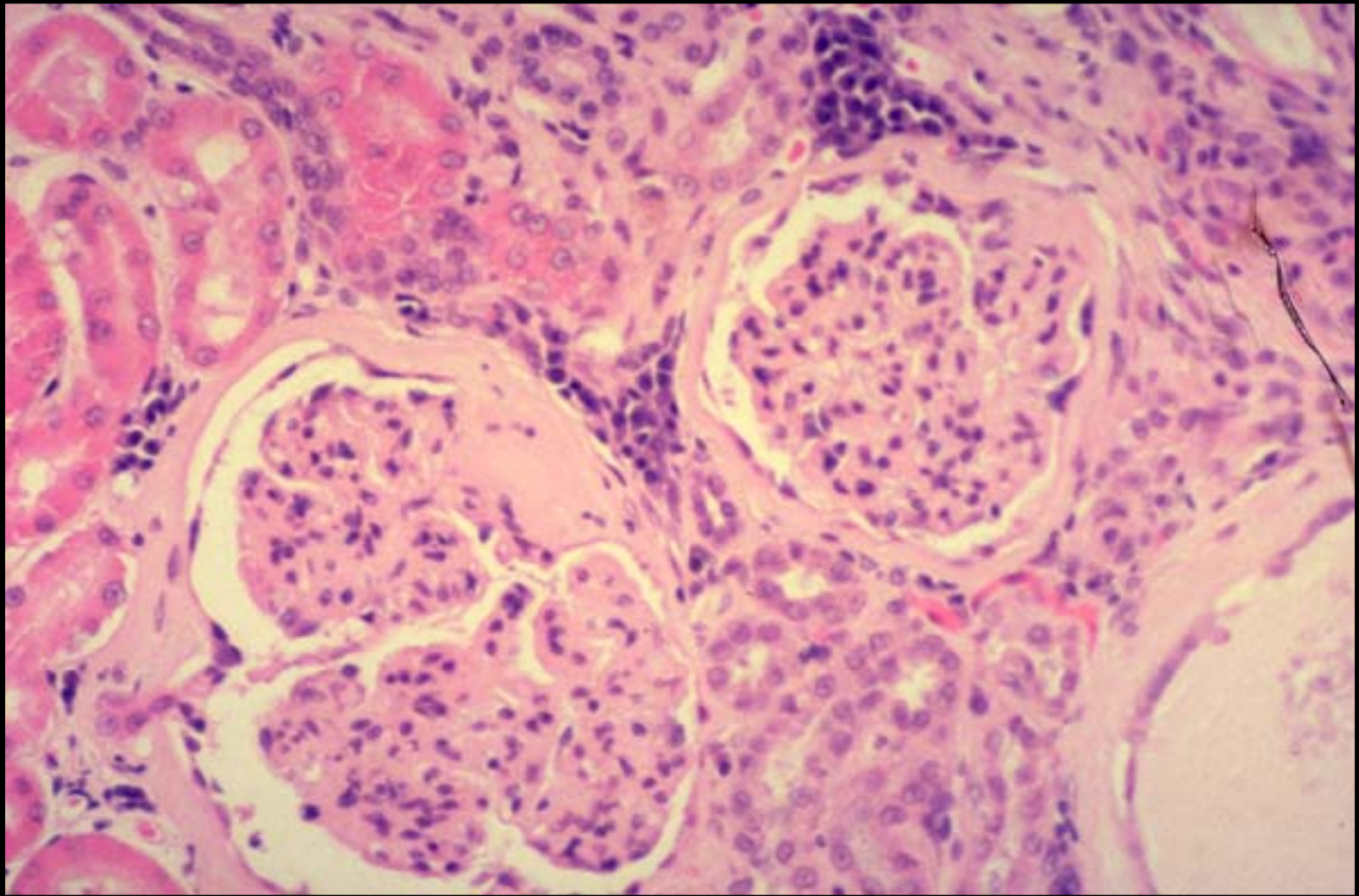
Dog – chronic glomerulonephritis – note the granularity and reduced depth of the renal cortex



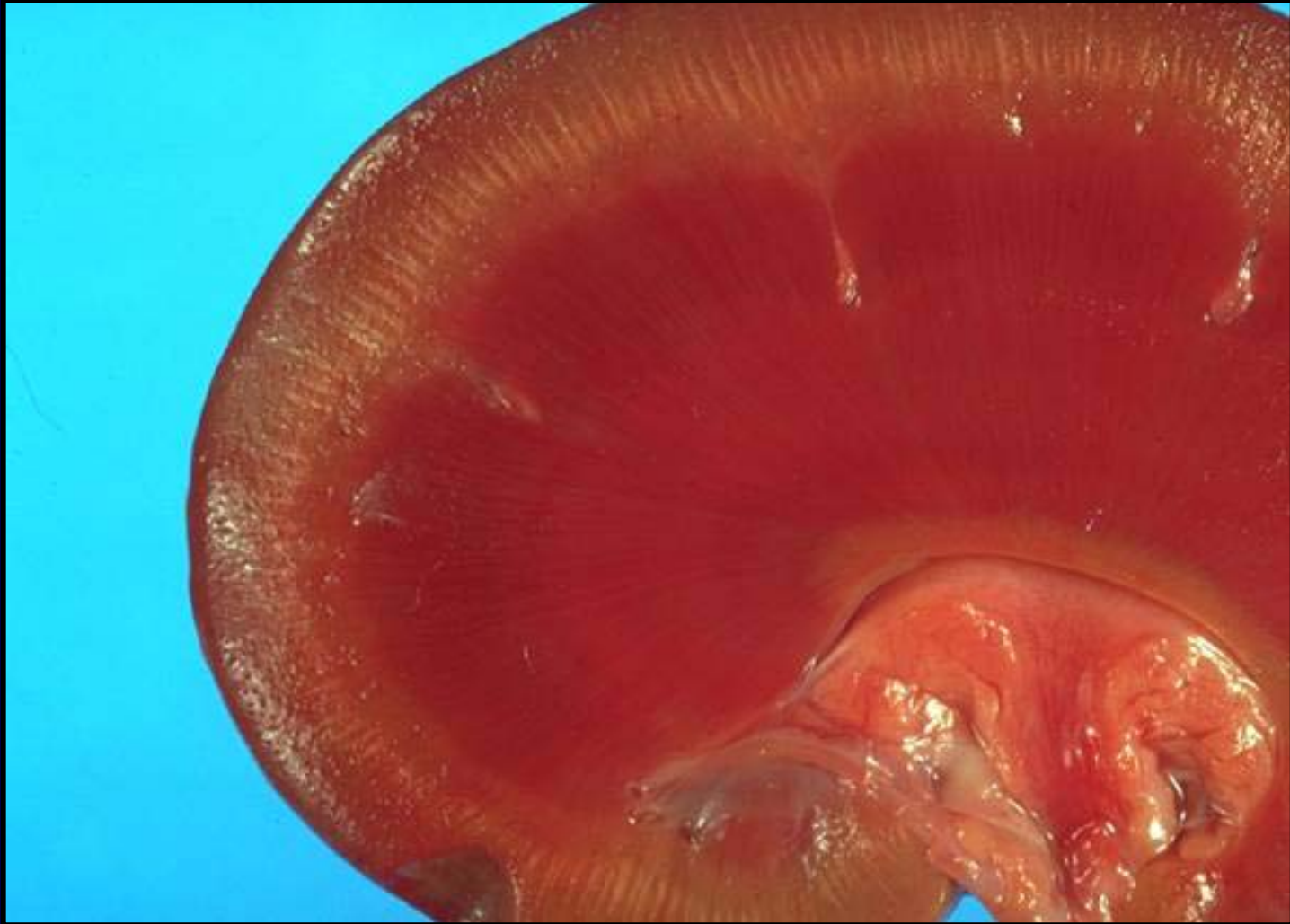


Sheep – chronic
glomerulonephritis

Dog – severe chronic membranoproliferative glomerulonephritis



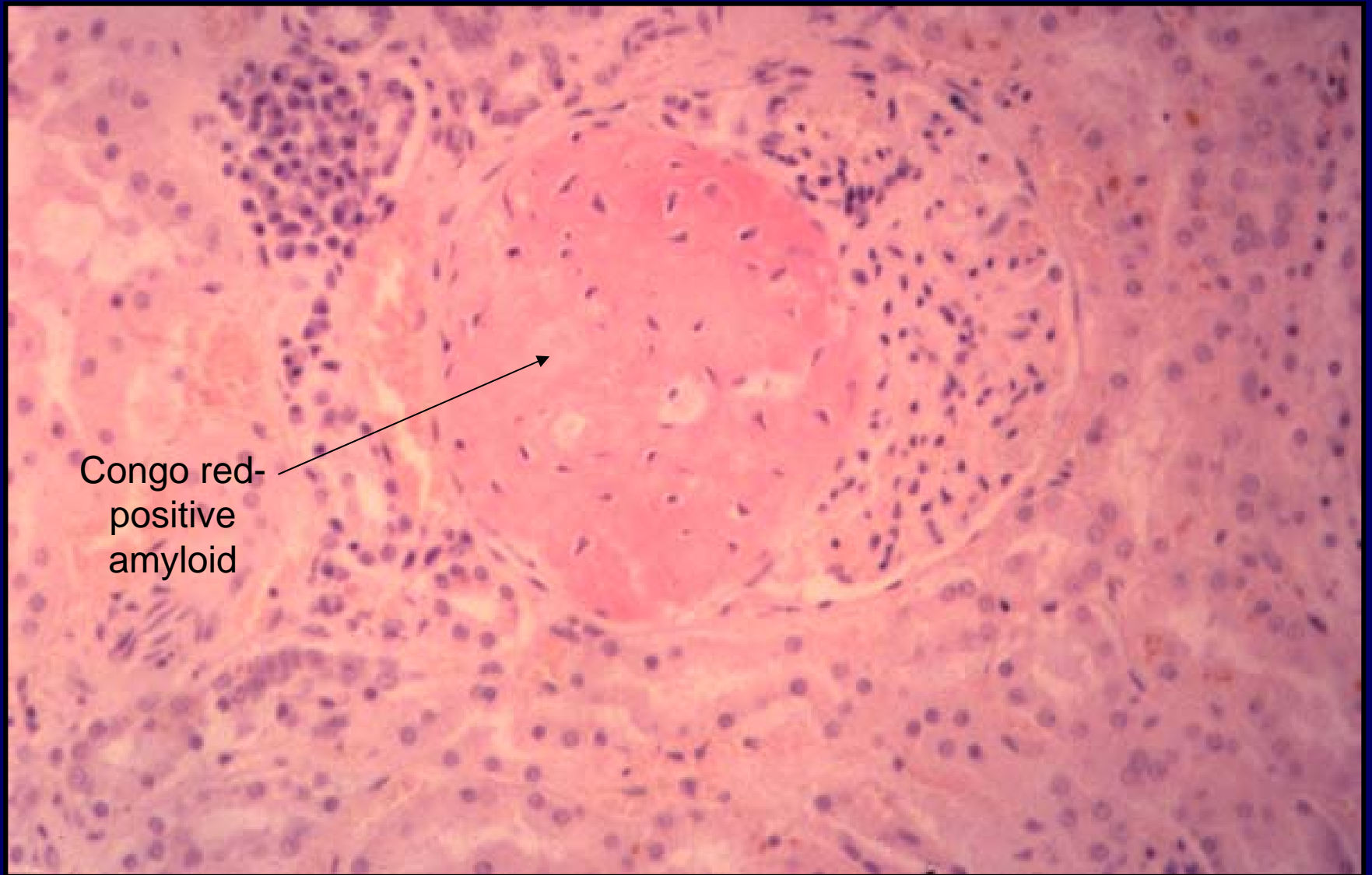
Dog – glomerular amyloidosis



Cow – massive renomegaly and renal cortical pallor due to amyloidosis



Glomerular amyloidosis (Congo red stain)



Renal biopsy is necessary to distinguish glomerular amyloidosis from glomerulonephritis

