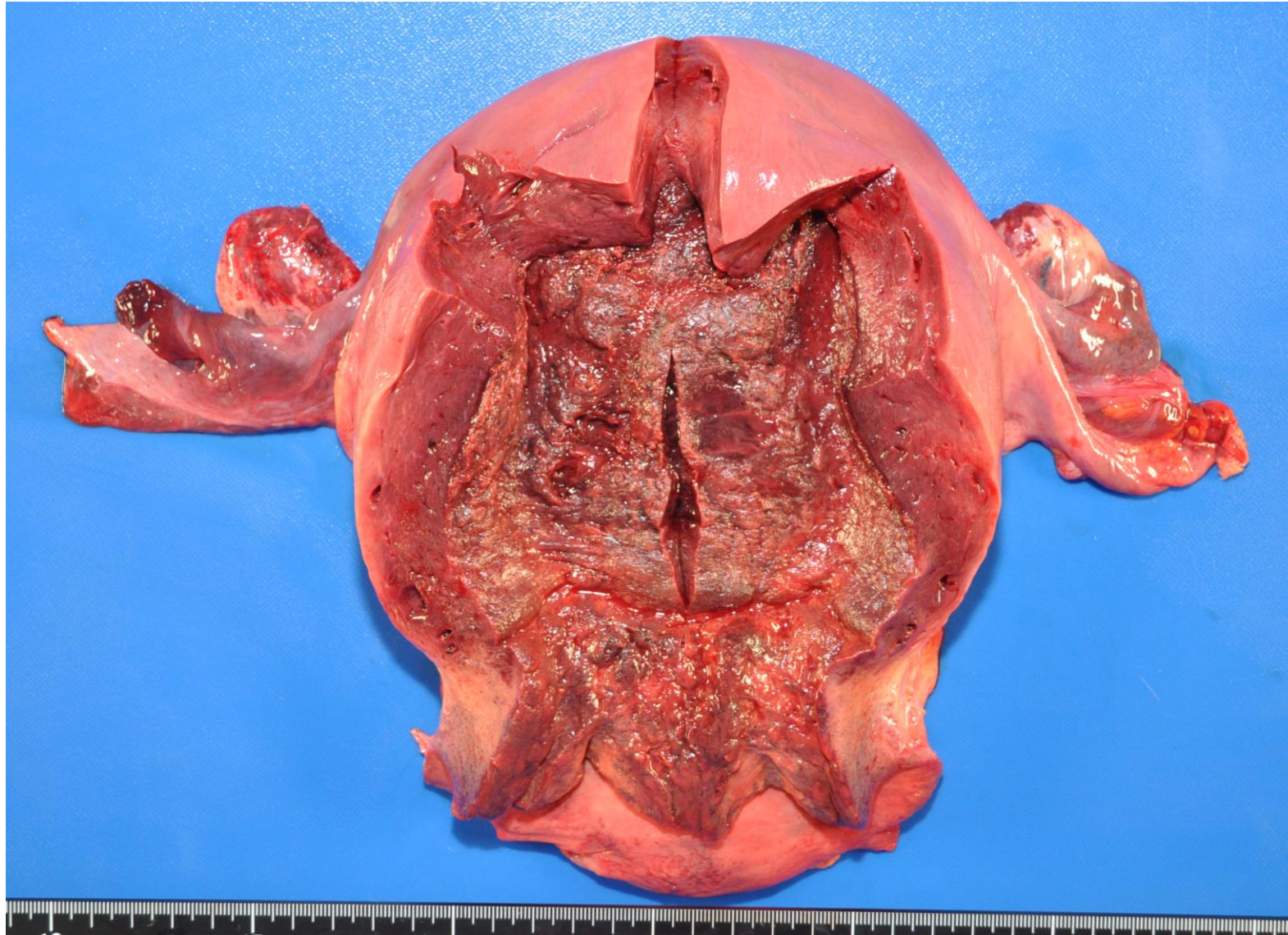


# Streptococcal endometritis in the puerperal uterus provoking fulminant streptococcal infection (puerperal fever)

A 38-year-old woman gave her first birth to a healthy neonate through painless vaginal delivery. On the postpartum day 2, she complained of abdominal pain. On the day 3, cyanosis and pale bloody uterine discharge occurred. On the day 4, vomiting and purpura on the hand were followed by cardiopulmonary arrest. Blood tests suggested severe hepatic failure. The 4-day aggressive clinical course was consistent with puerperal fever. Blood culture was negative, but swab culture from the uterine cervix revealed *Streptococcus pyogenes*. Forensic autopsy demonstrated necrotizing endometritis in the enlarged puerperal uterus caused by *Streptococcus pyogenes* infection. Fulminant streptococcal infection without gangrene of the extremities manifested systemic association of hemophagocytosis in the spleen, bilateral renal cortical necrosis, myocardial ischemia and DIC (microthrombosis). Leukostasis was observed in capillary vessels, including the liver. Bacterial embolism was absent. The bone marrow was not examined.

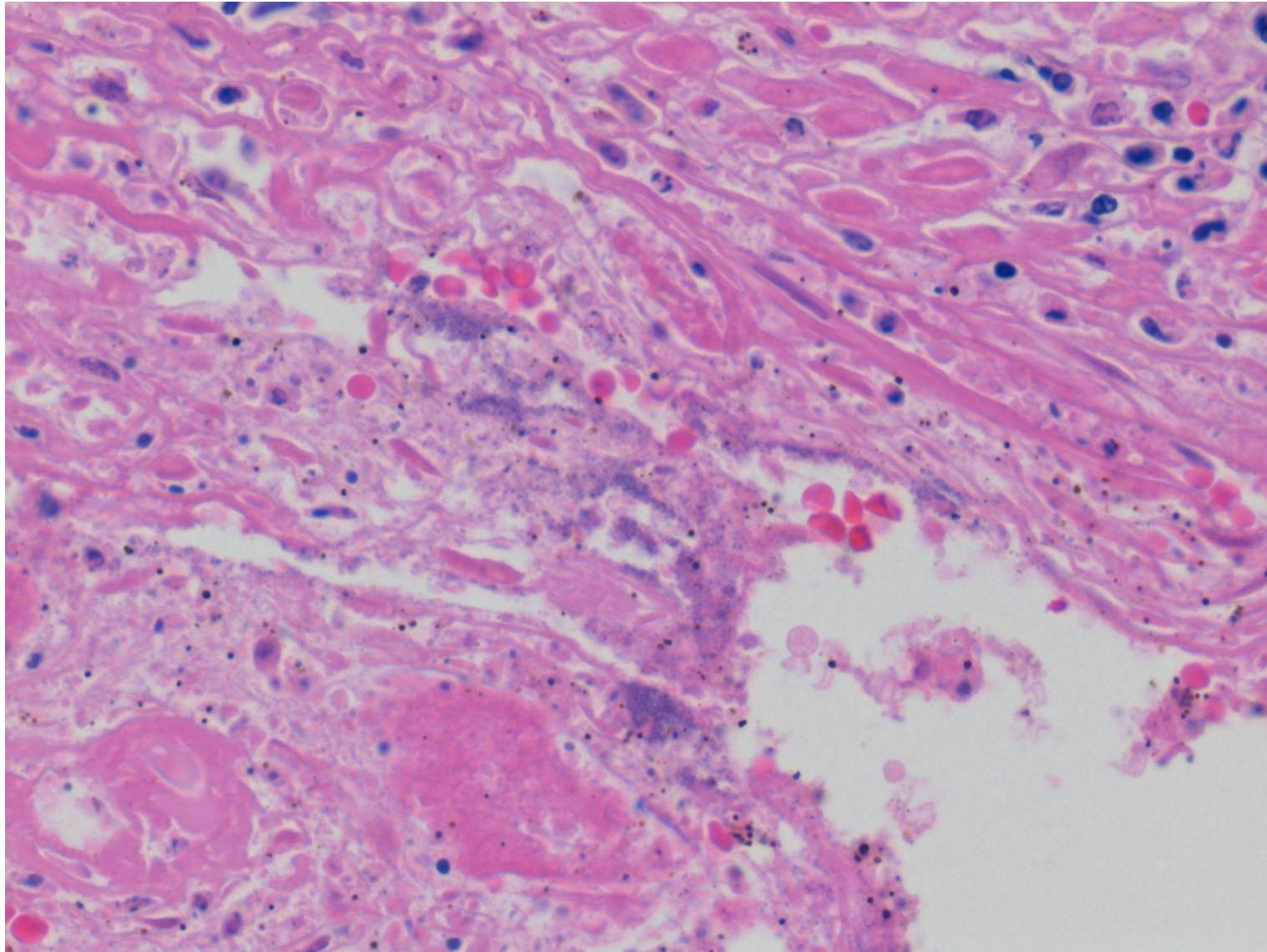
Ref.: Kato S, et al. Fulminant group A streptococcal infection without gangrene in the extremities: Analysis of five autopsy cases. *Pathol Int* 2018; 68: 419–424. doi:10.1111/pin.12678



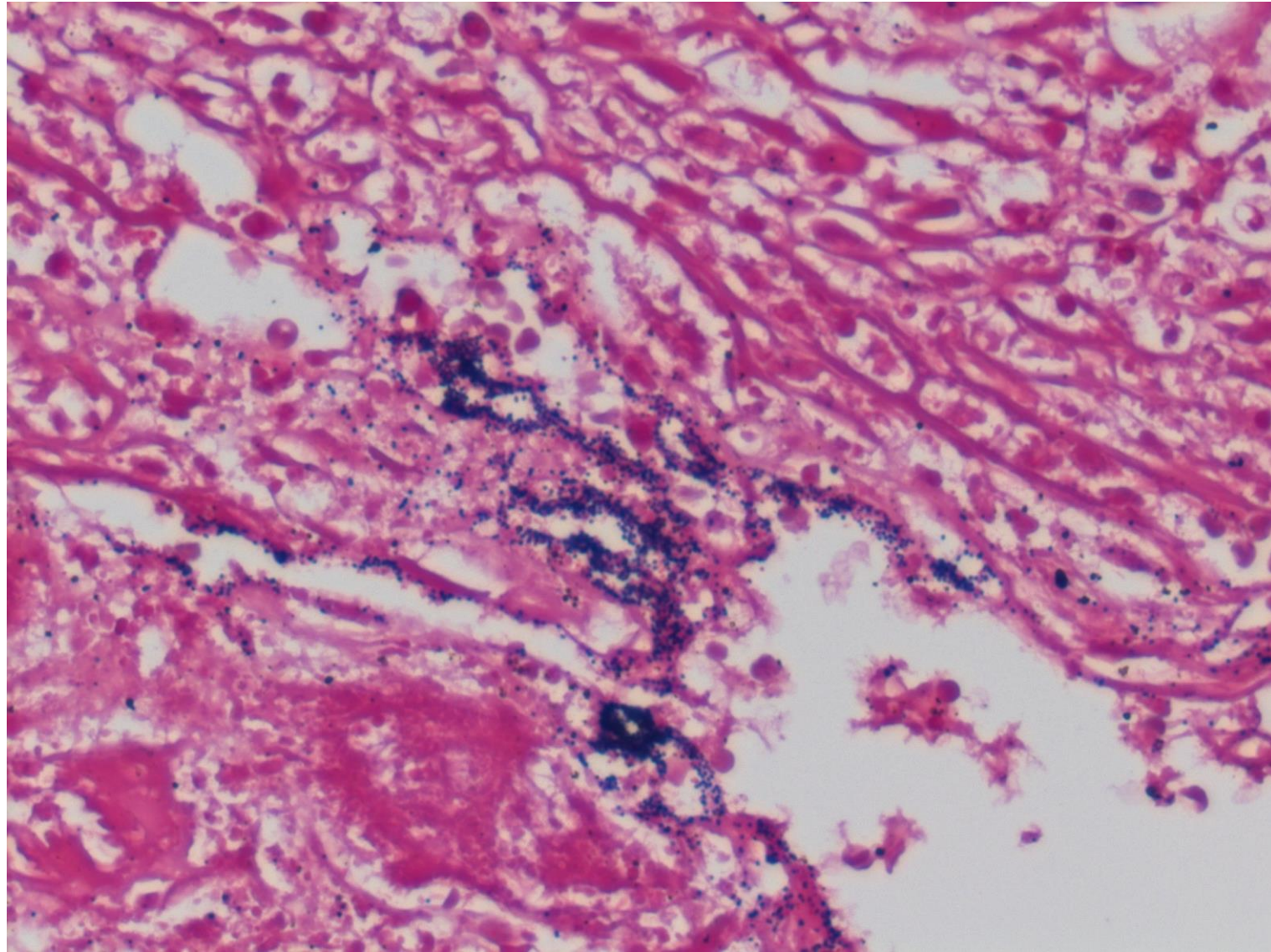
Puerperal uterus 4 days after vaginal delivery (38-year-old female patient). Necrotizing endometritis (causing puerperal fever) is grossly evident.



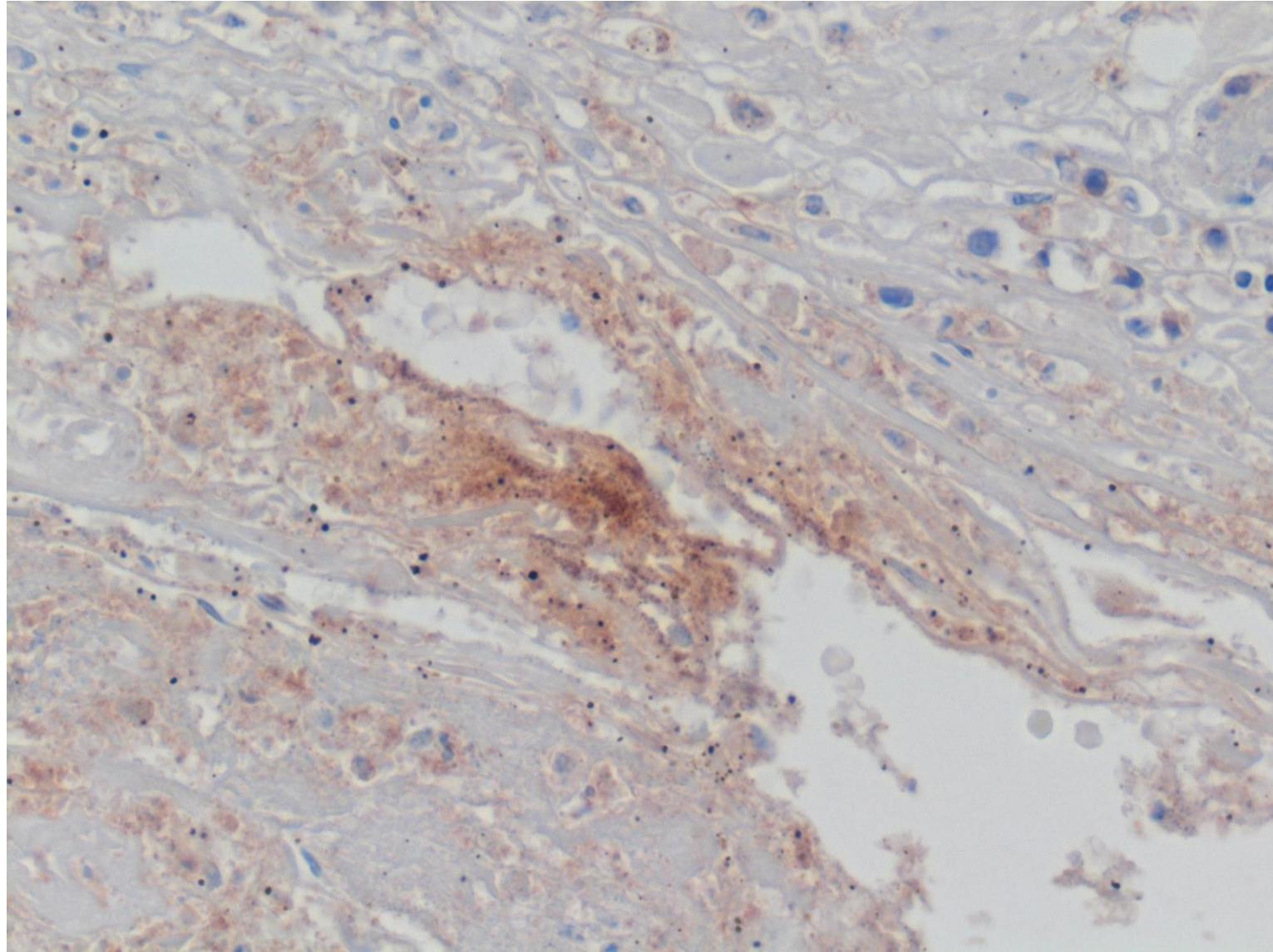
Puerperal uterus 4 days after vaginal delivery (38-year-old female patient). Cut surfaces of the uterus after formalin fixation. Necrotizing endometritis and transmural congestion are grossly observed.



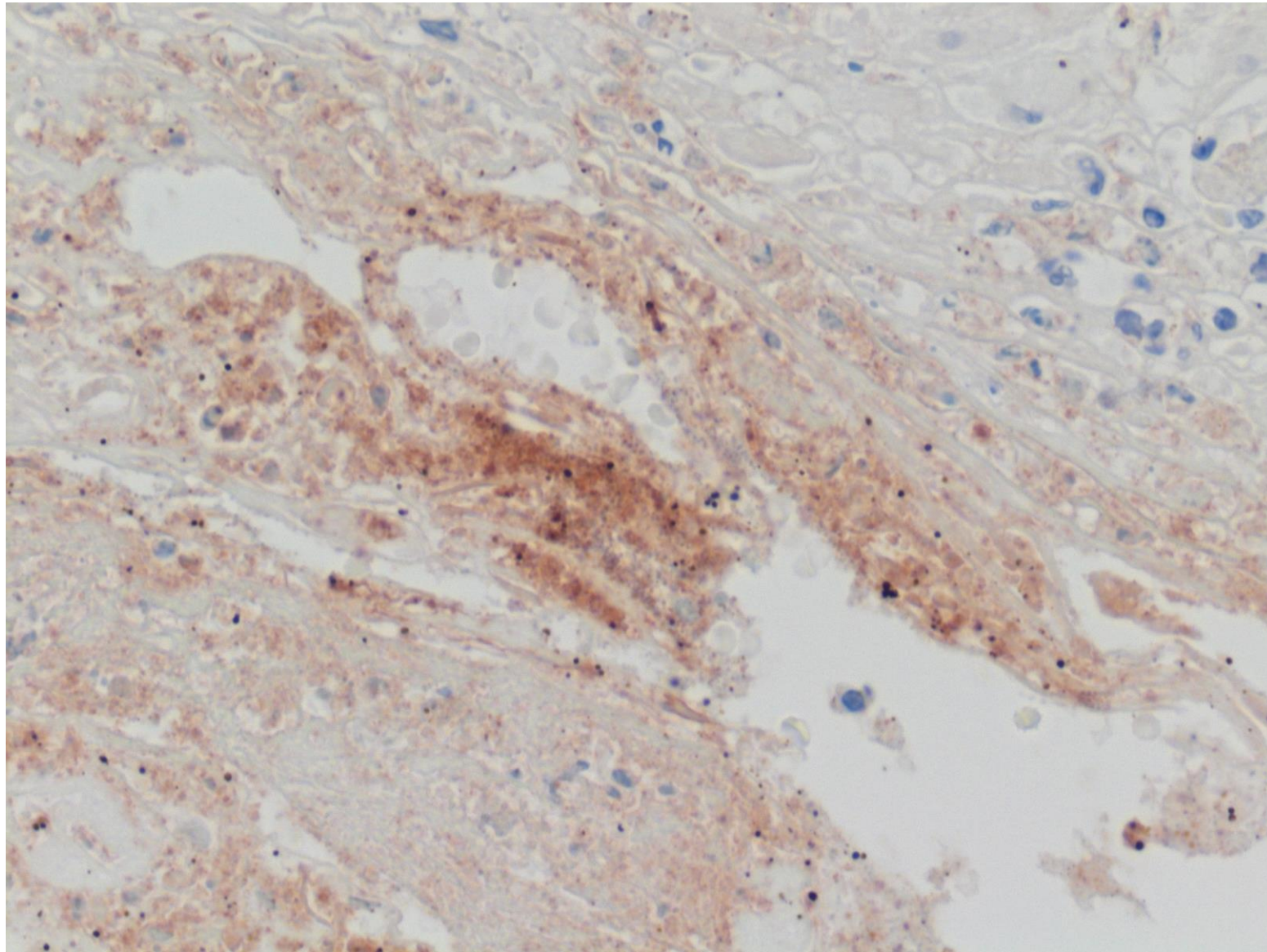
Eroded endometrium in the puerperal uterus (a 38-year-old female patient). Coccal colonization is observed on the thrombotic endometrium. H&E



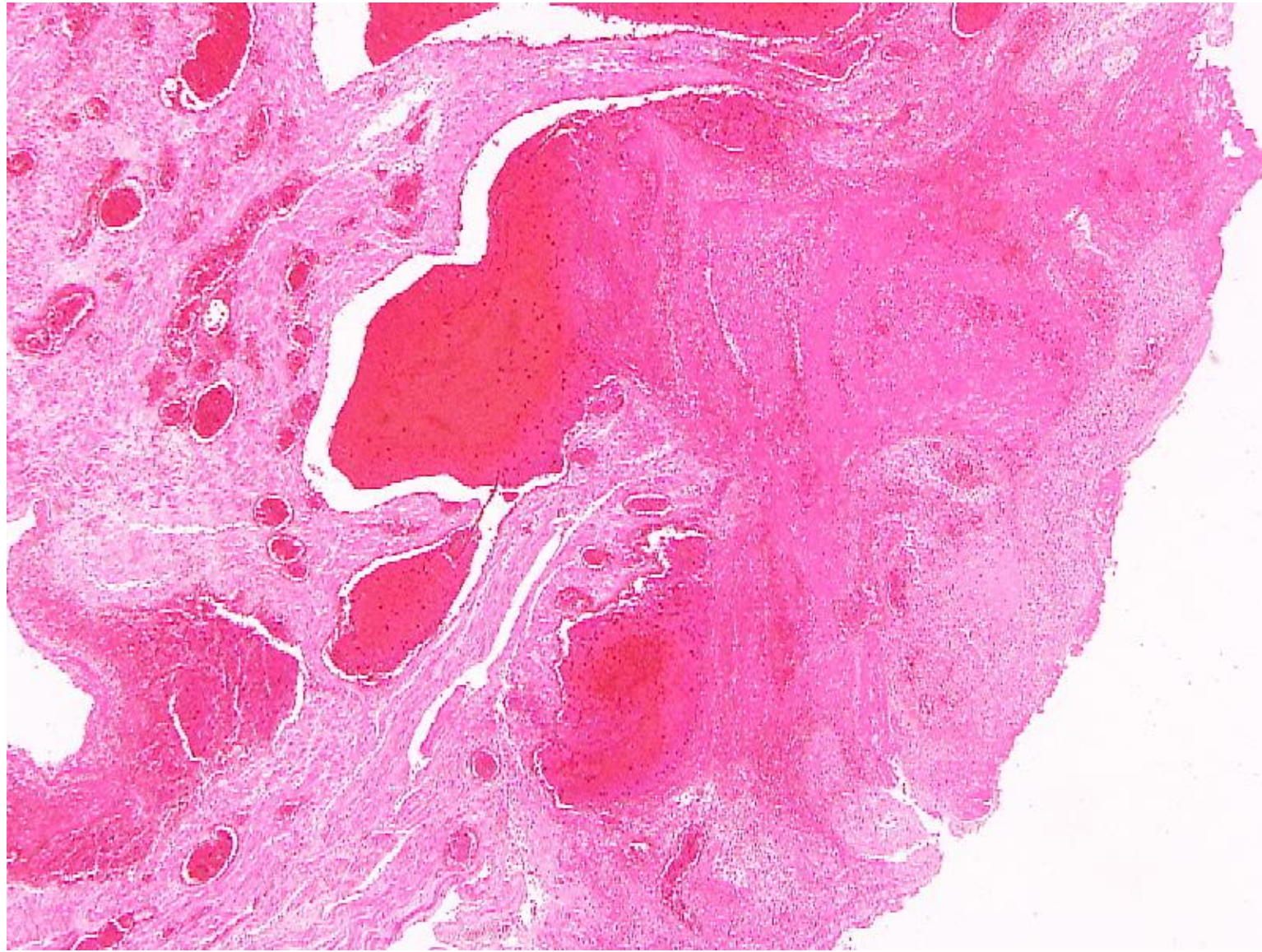
Eroded endometrium in the puerperal uterus (a 38-year-old female patient). Cocci on the thrombotic endometrium are Gram-positive. Gram staining



Eroded endometrium in the puerperal uterus (a 38-year-old female patient). Cocci on the thrombotic endometrium are immunoreactive for streptococcal Ag. Immunostaining for streptococcal Ag using an antiserum.

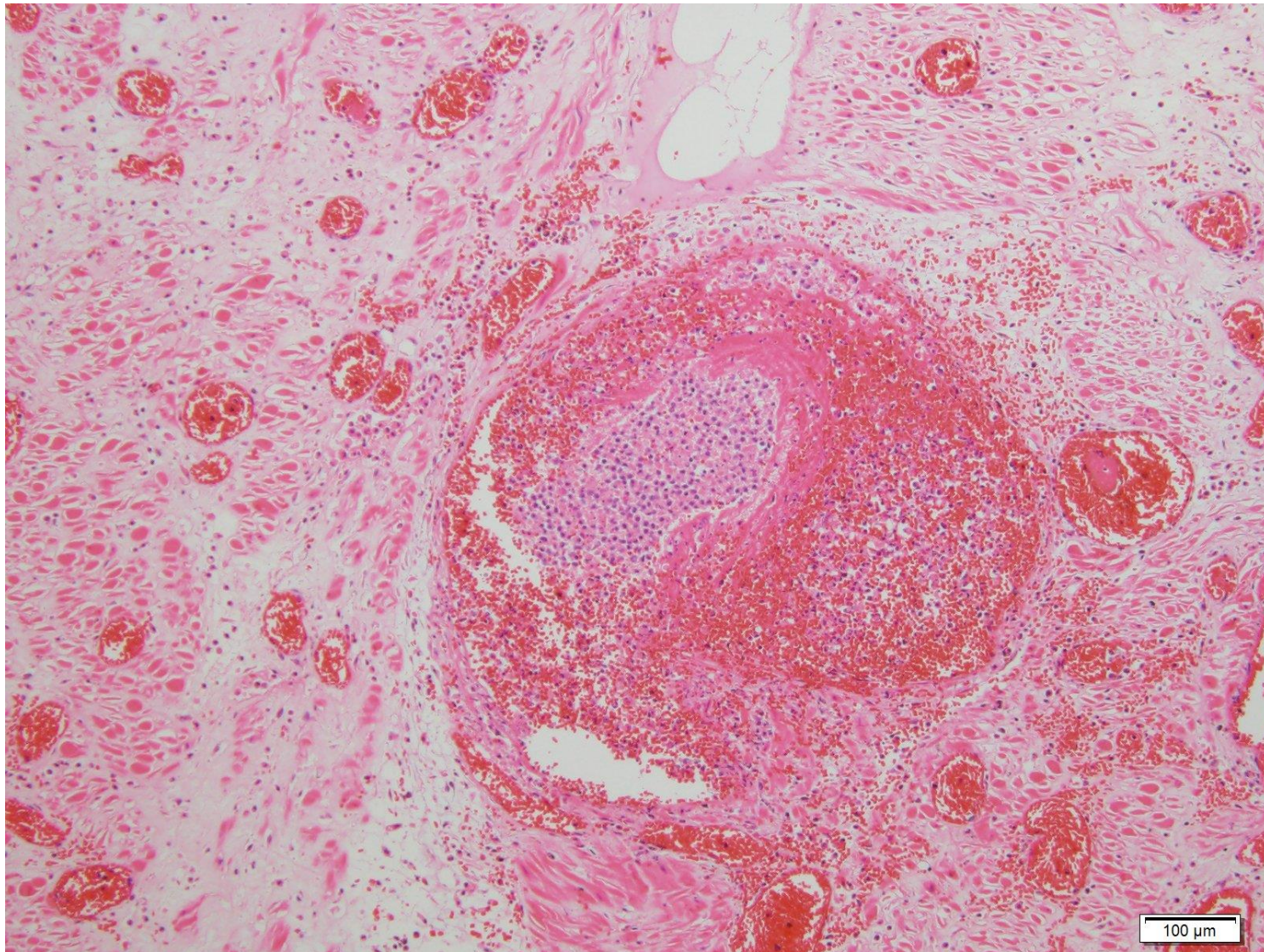


Eroded endometrium in the puerperal uterus (a 38-year-old female patient). Cocci on the thrombotic endometrium are immunoreactive for Strep A, a sugar moiety specific for group A *Streptococcus*. Immunostaining for Strep A using a monoclonal Ab.

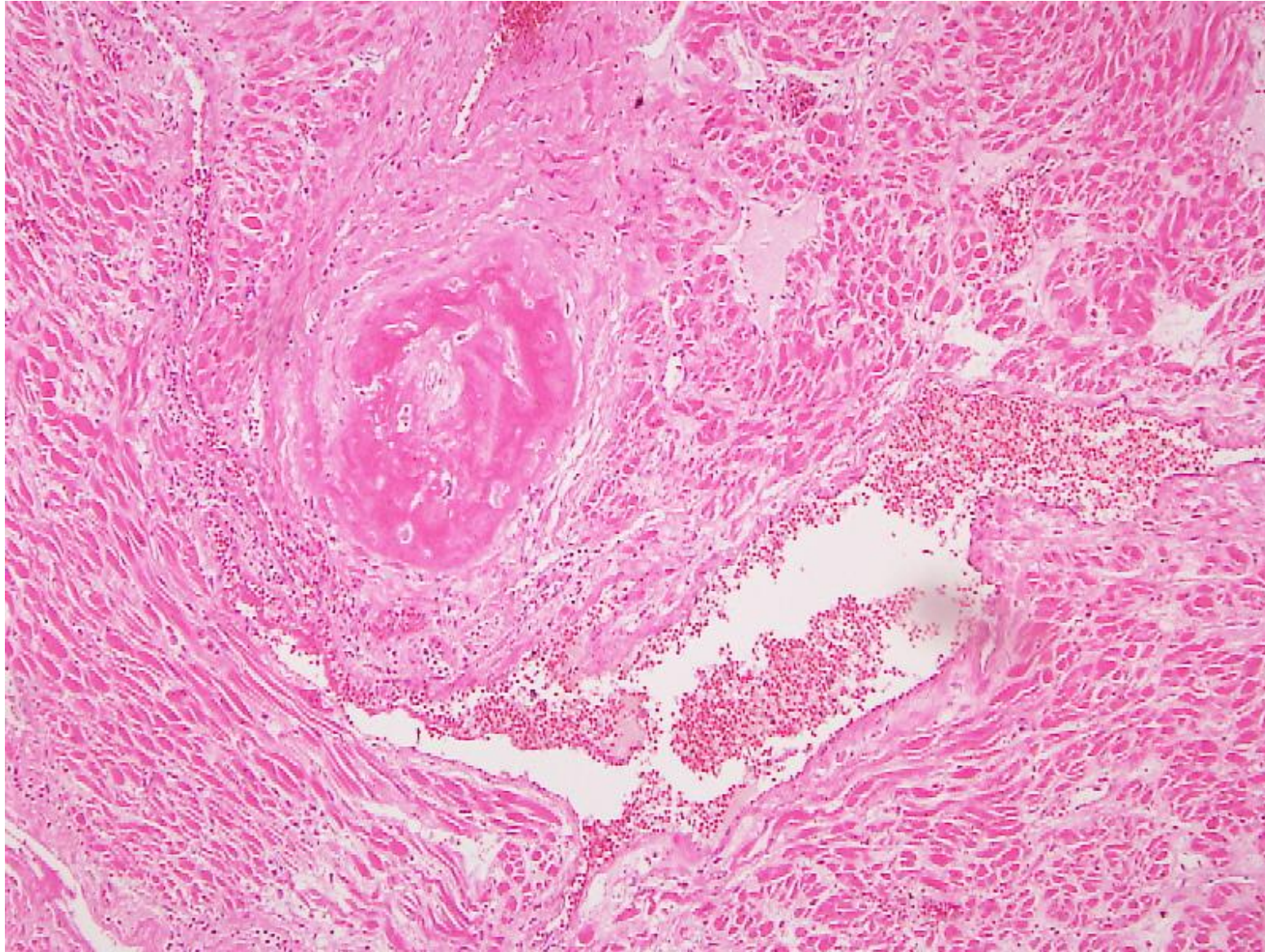


The puerperal uterus shows marked congestion with thrombosis formation. H&E

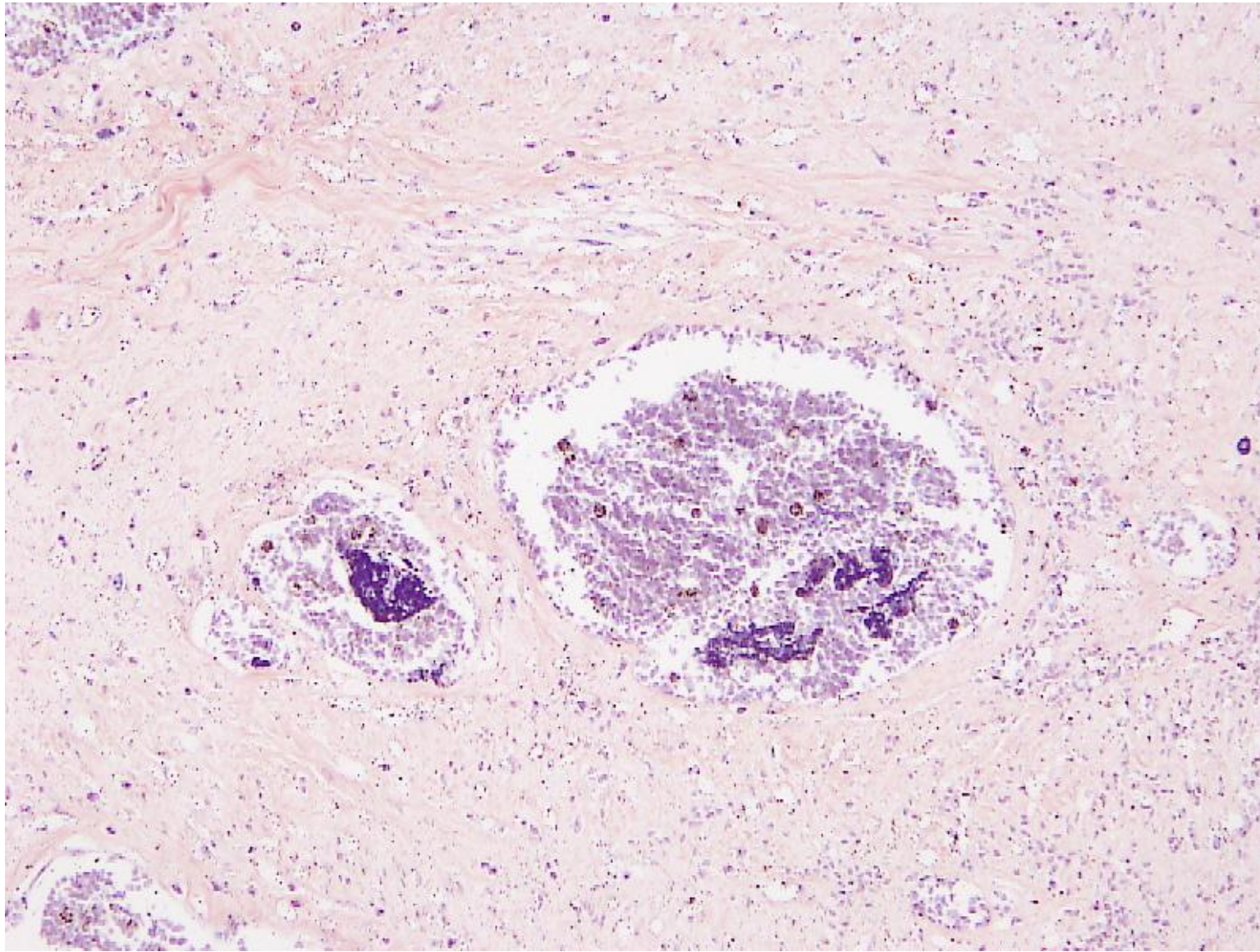




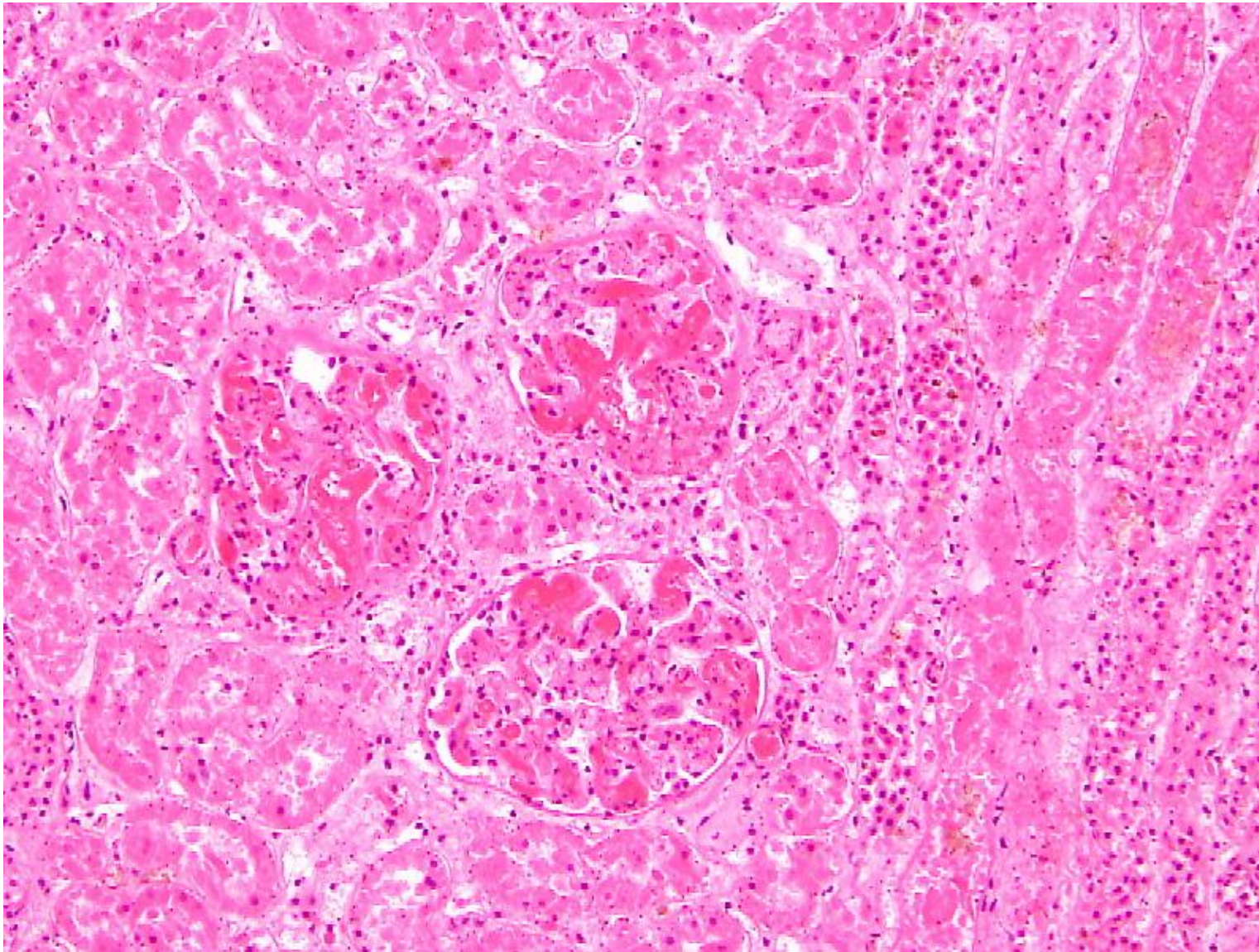
The puerperal uterus shows marked congestion with leukostasis in the vessel. H&E



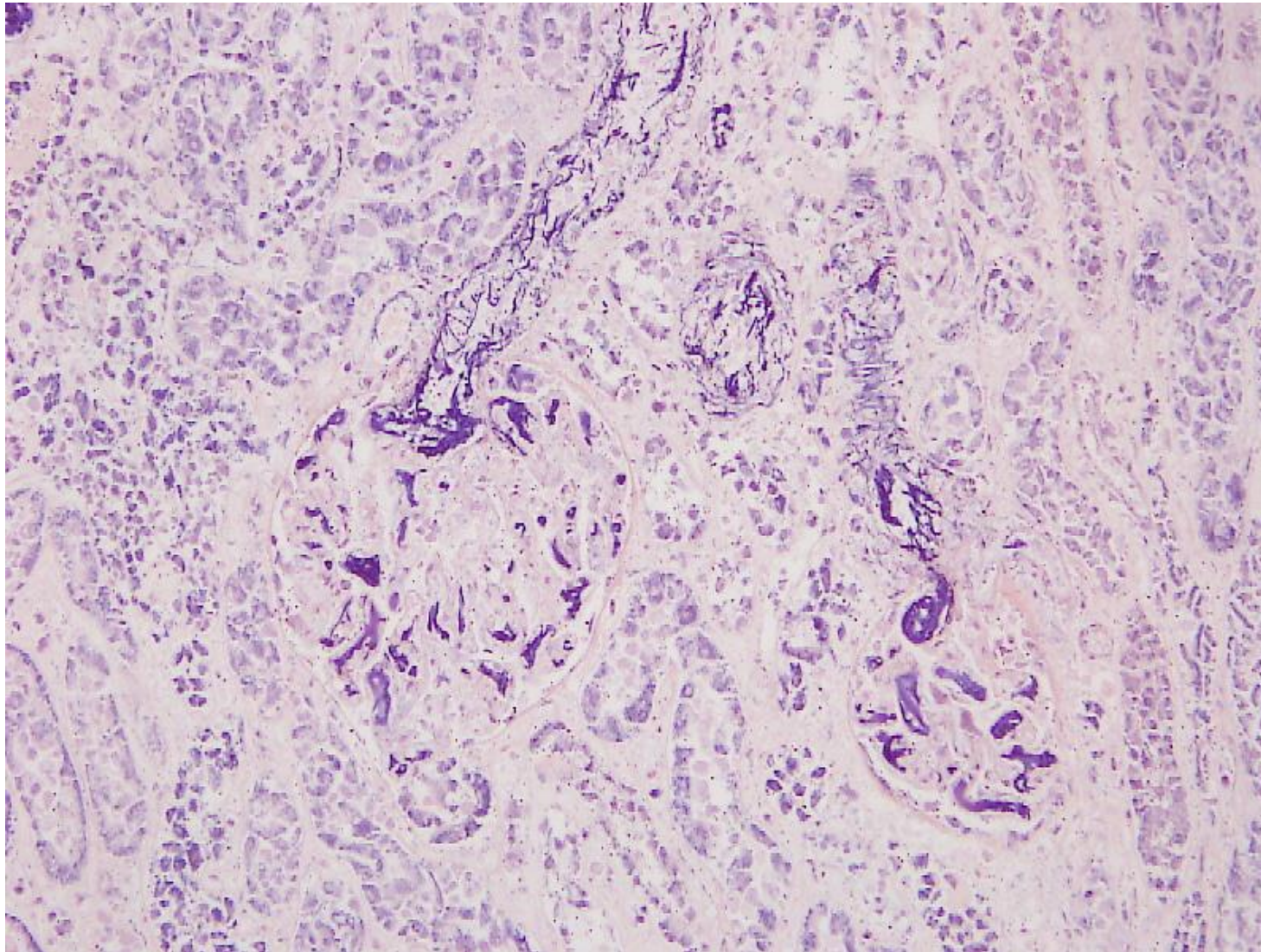
The puerperal uterus shows marked congestion with thrombosis formation. H&E



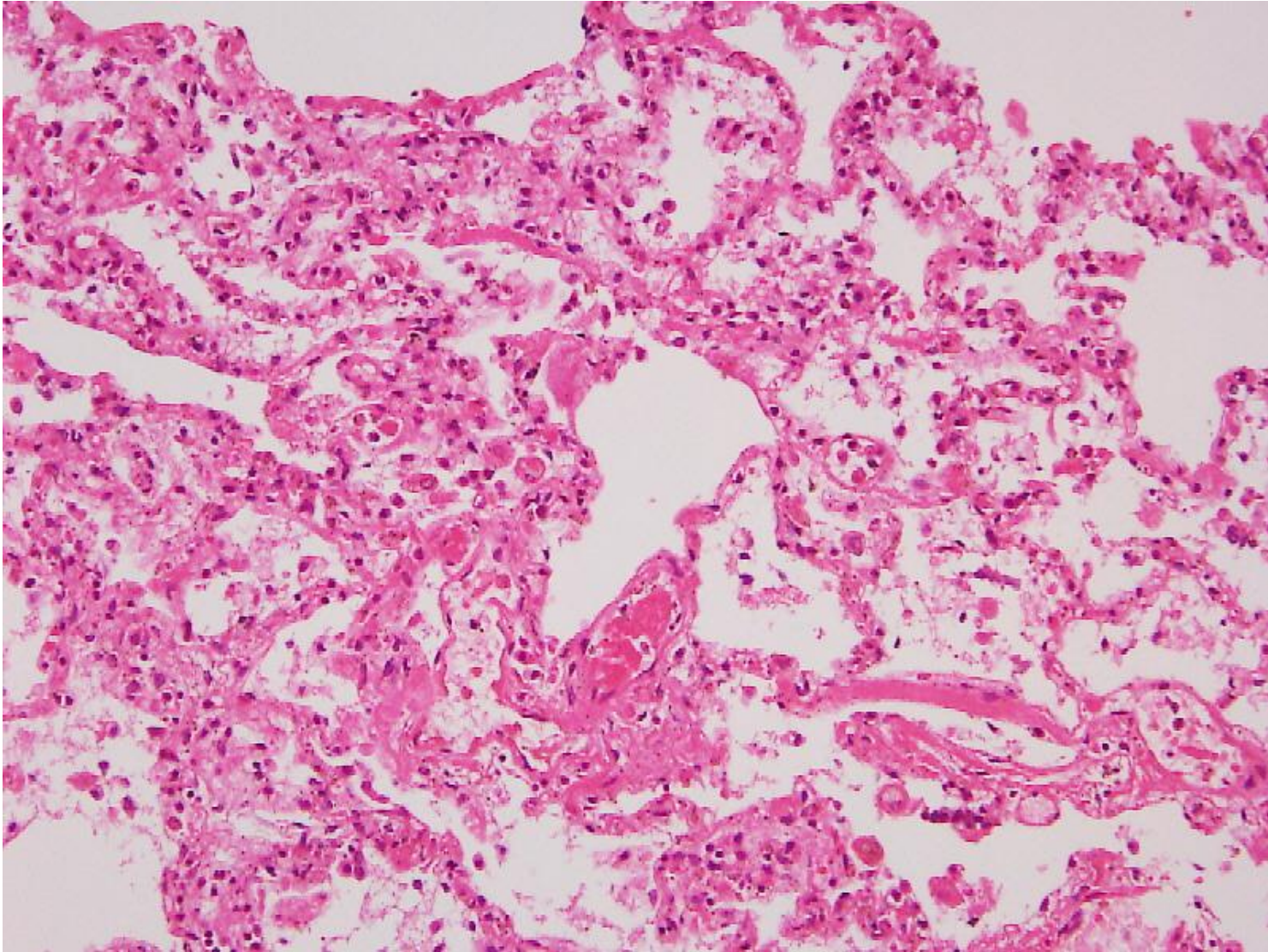
The puerperal uterus shows marked congestion with thrombosis formation. PTAH staining



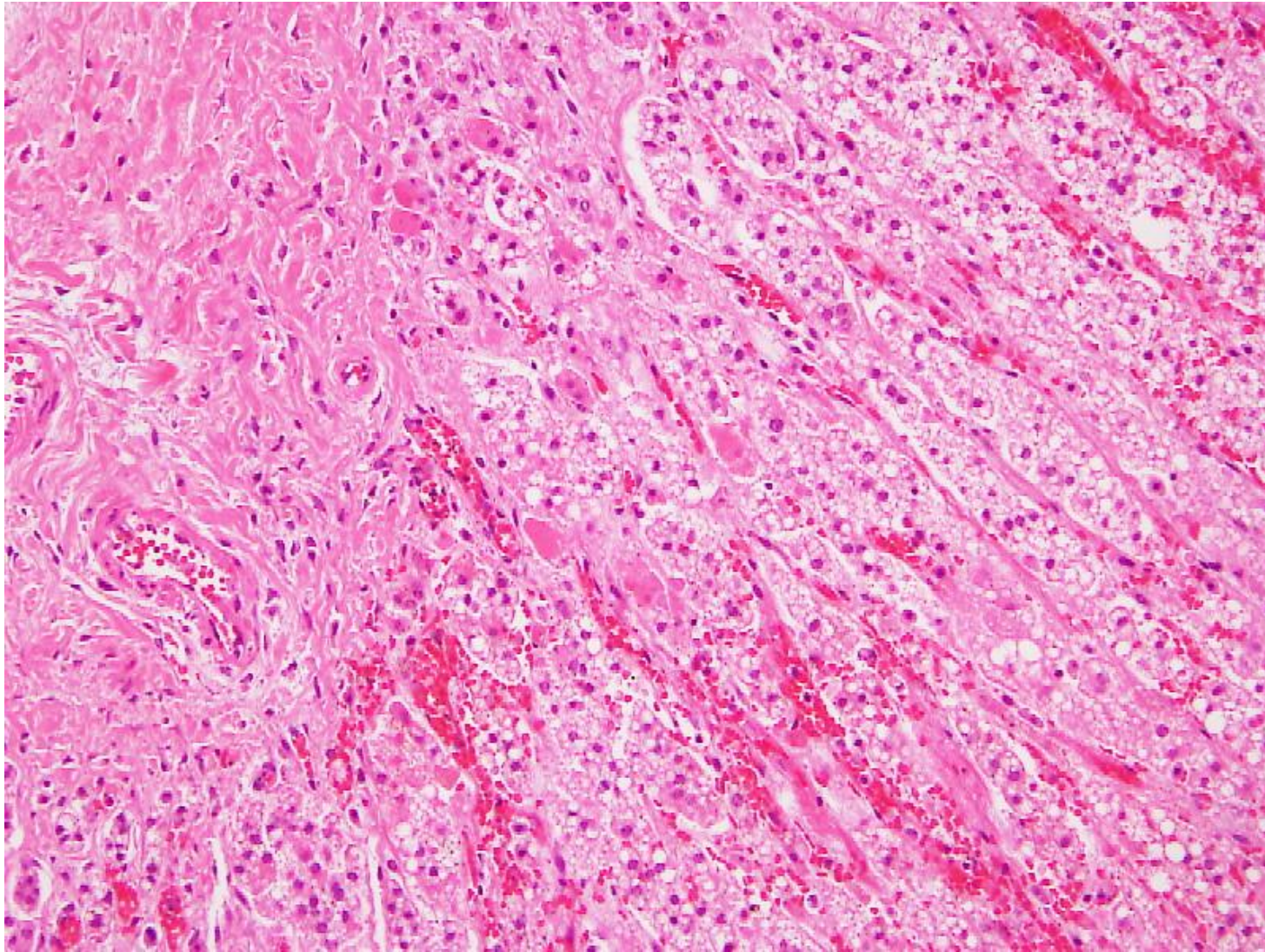
The kidney shows extensive fibrin microthrombosis in the glomeruli with coagulation necrosis of the renal tubules, confirming the diagnosis of bilateral renal cortical necrosis. H&E



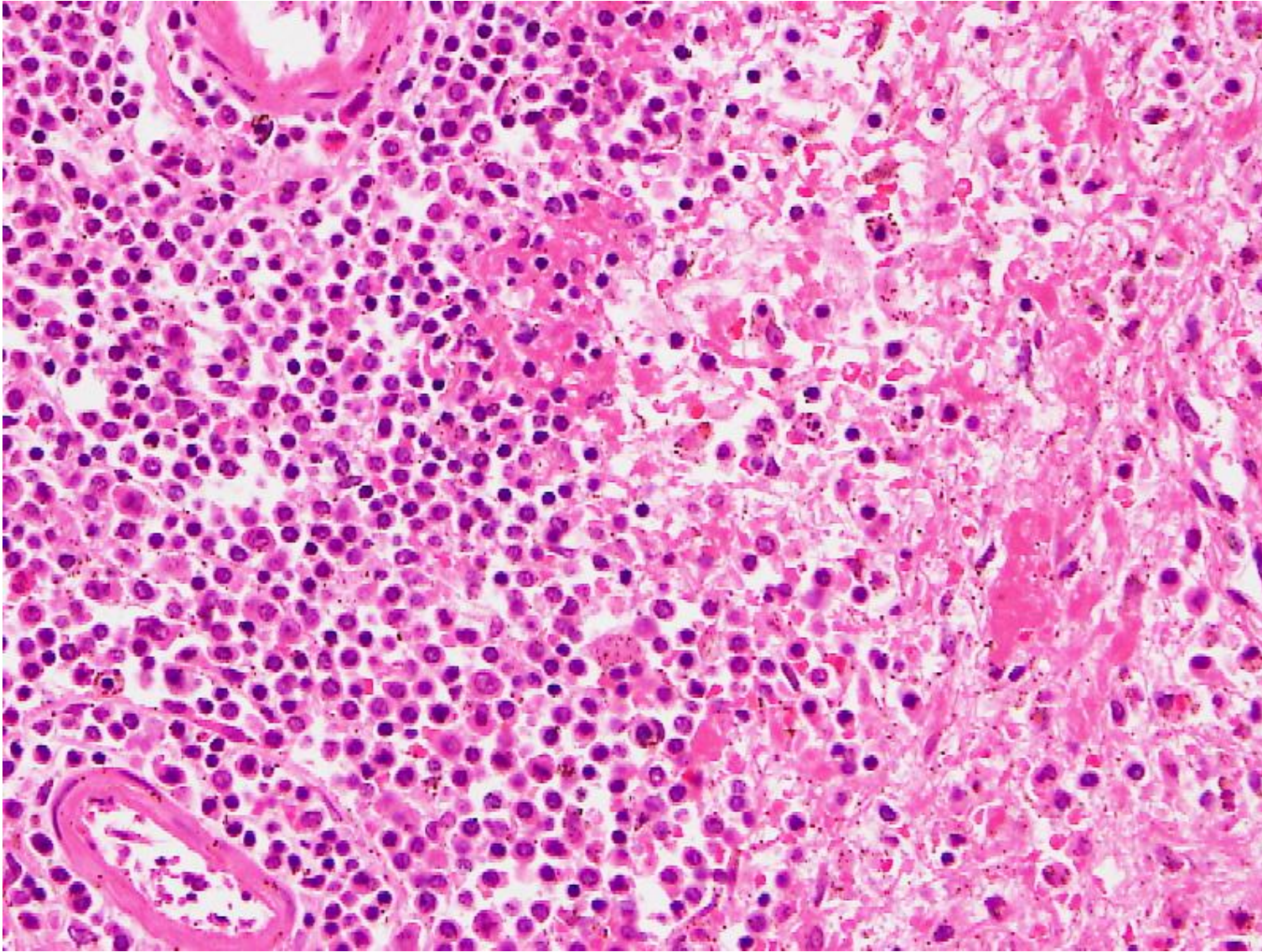
The kidney shows extensive fibrin microthrombosis in the glomeruli with fibrin deposition along the necrotic proximal renal tubules, confirming the diagnosis of bilateral renal cortical necrosis. PTAH



The congested lung shows fibrin microthrombosis in the alveolar capillary lumina, confirming the association of disseminated intravascular coagulopathy. H&E

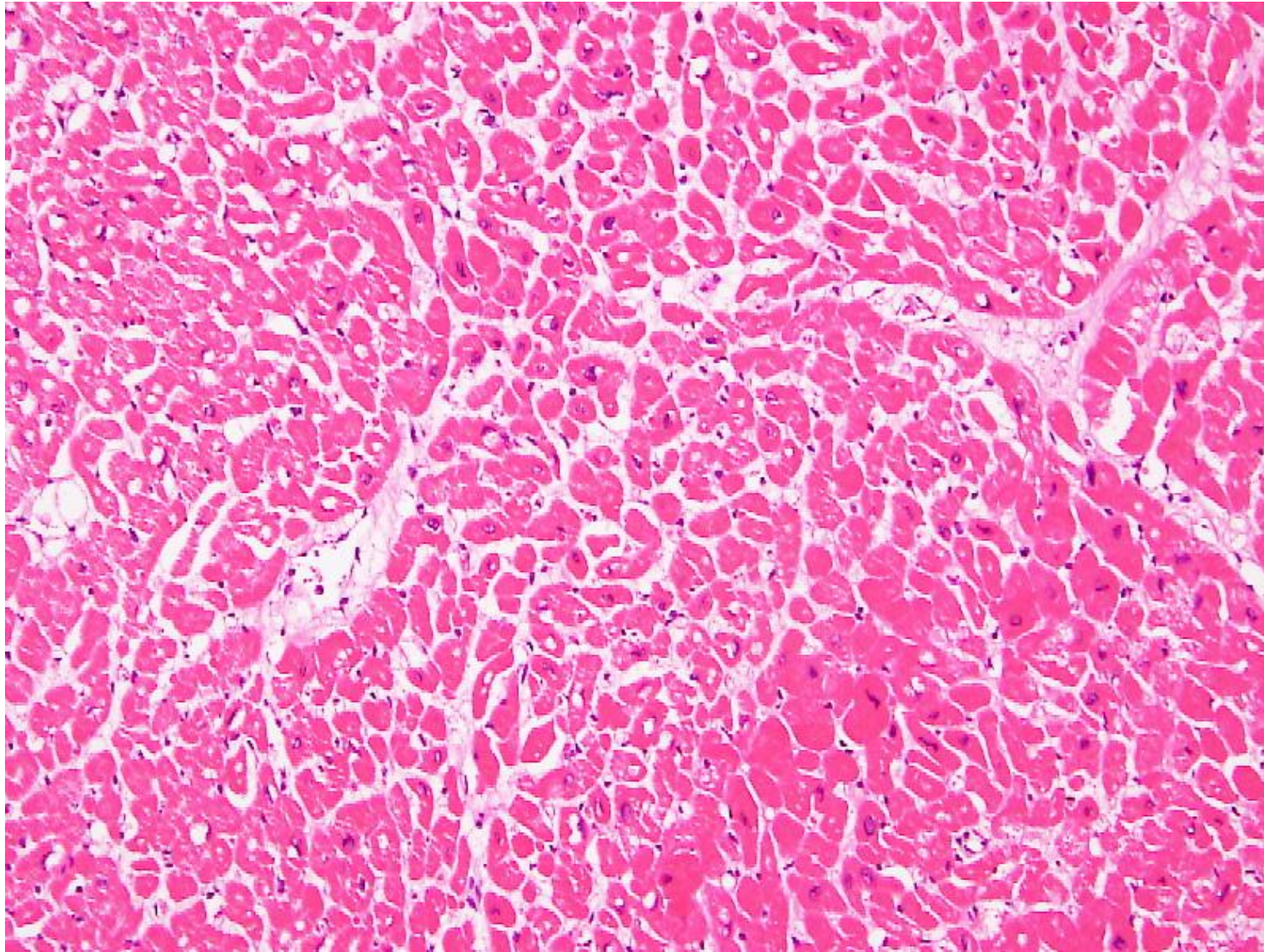


The congested adrenal gland shows fibrin microthrombosis in the capillary lumina, confirming the association of disseminated intravascular coagulopathy. H&E

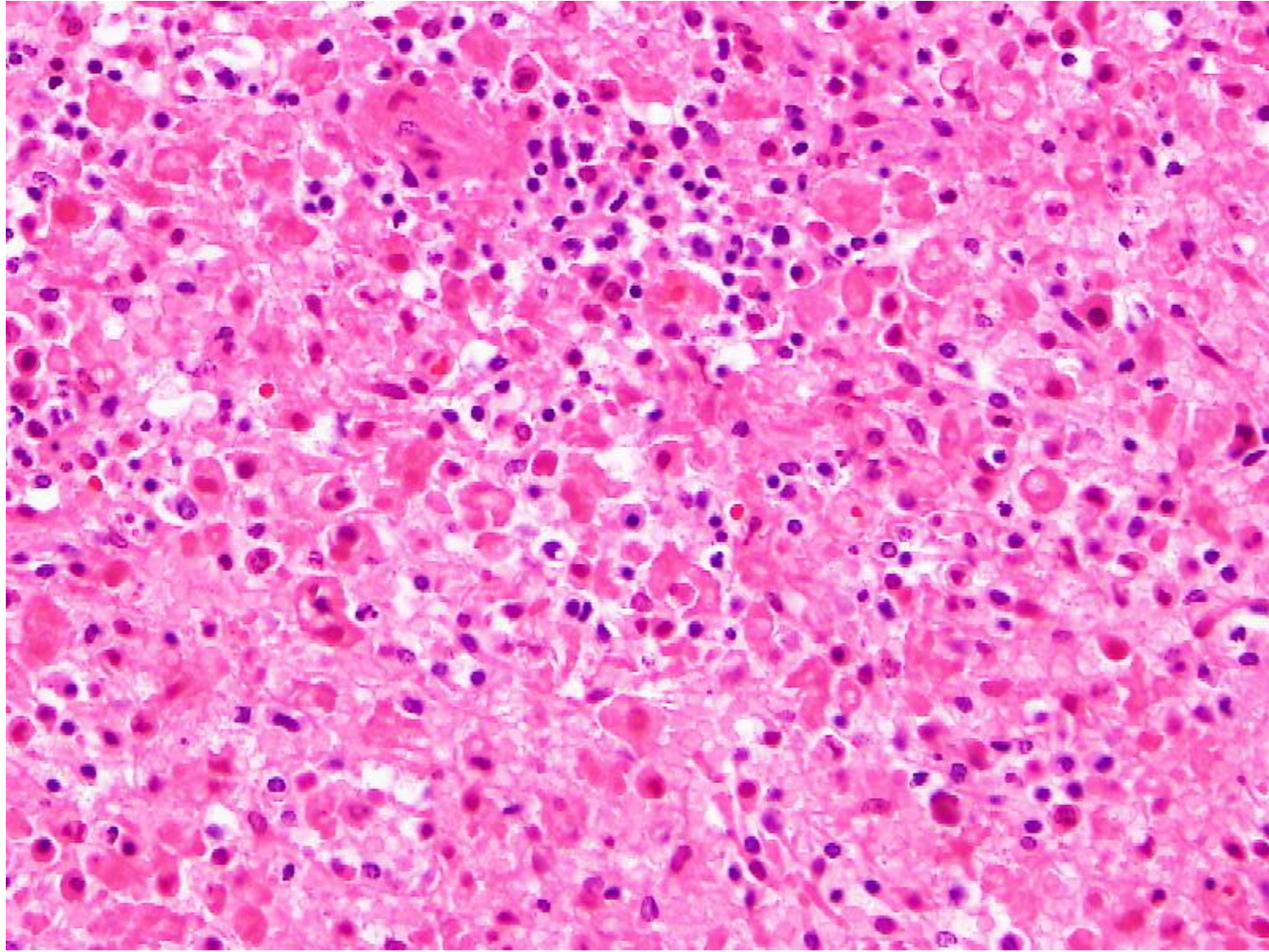


The congested spleen shows fibrin microthrombosis in the red pulp, confirming the association of disseminated intravascular coagulopathy. H&E

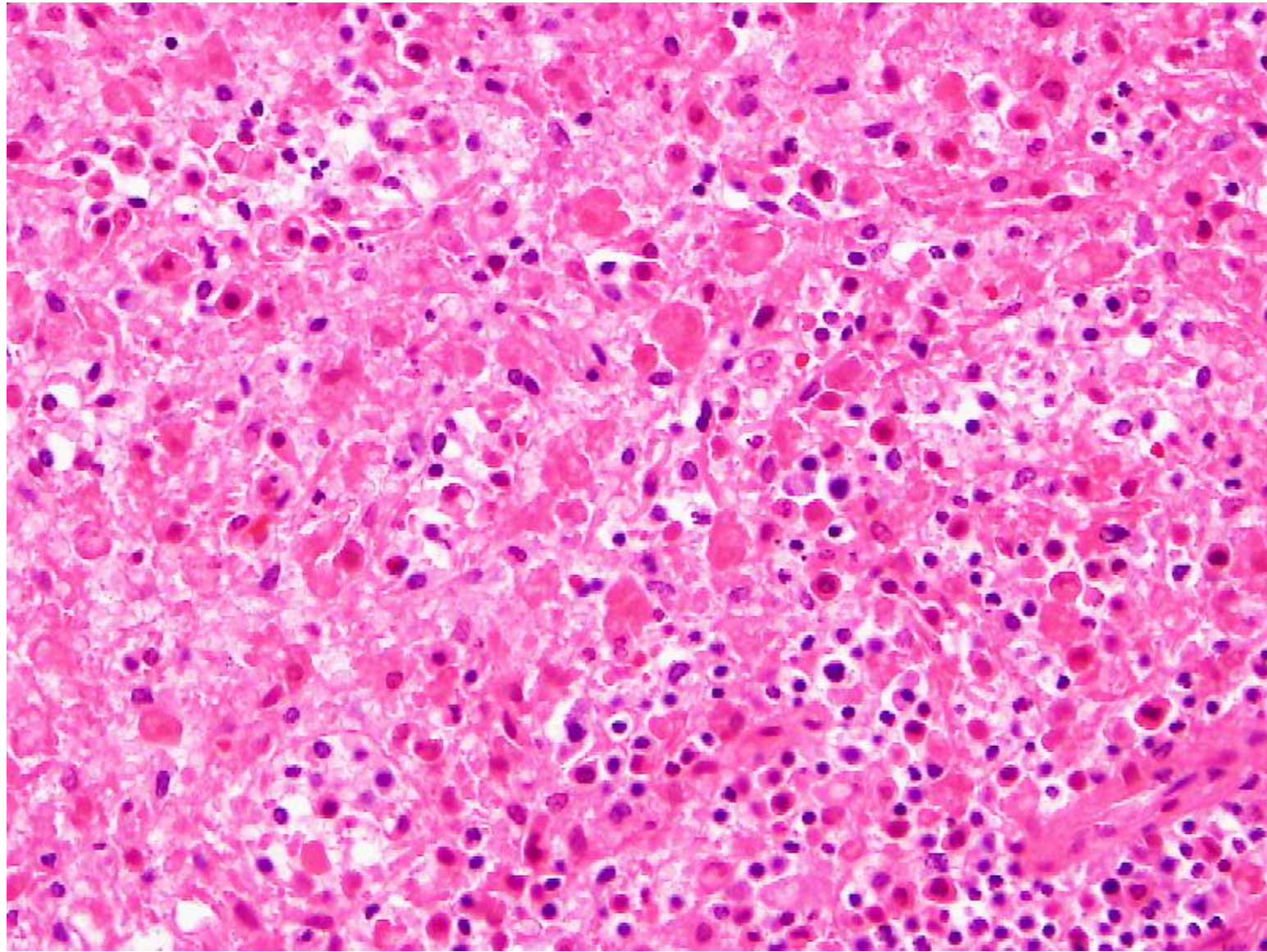




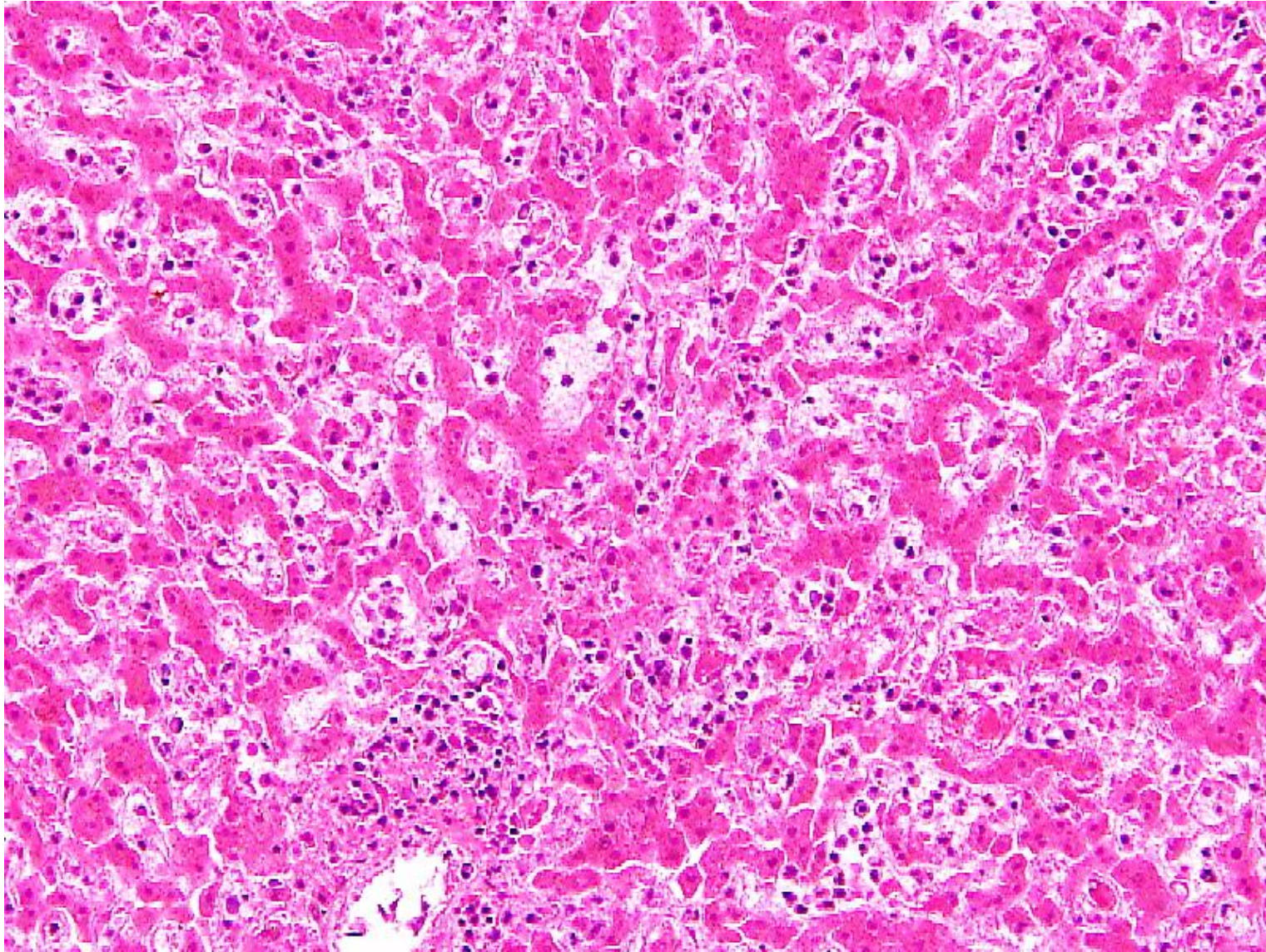
The heart shows multifocal ischemic change but without inflammatory reaction. H&E



The red pulp of the spleen shows hemophagocytic macrophages. Red cells are actively phagocytized by activated macrophages. H&E



The red pulp of the spleen shows hemophagocytic macrophages. Red cells are actively phagocytized by activated macrophages. H&E



The liver shows leukostasis in the sinusoid, and Kupffer cells are activated and hemophagocytic. H&E