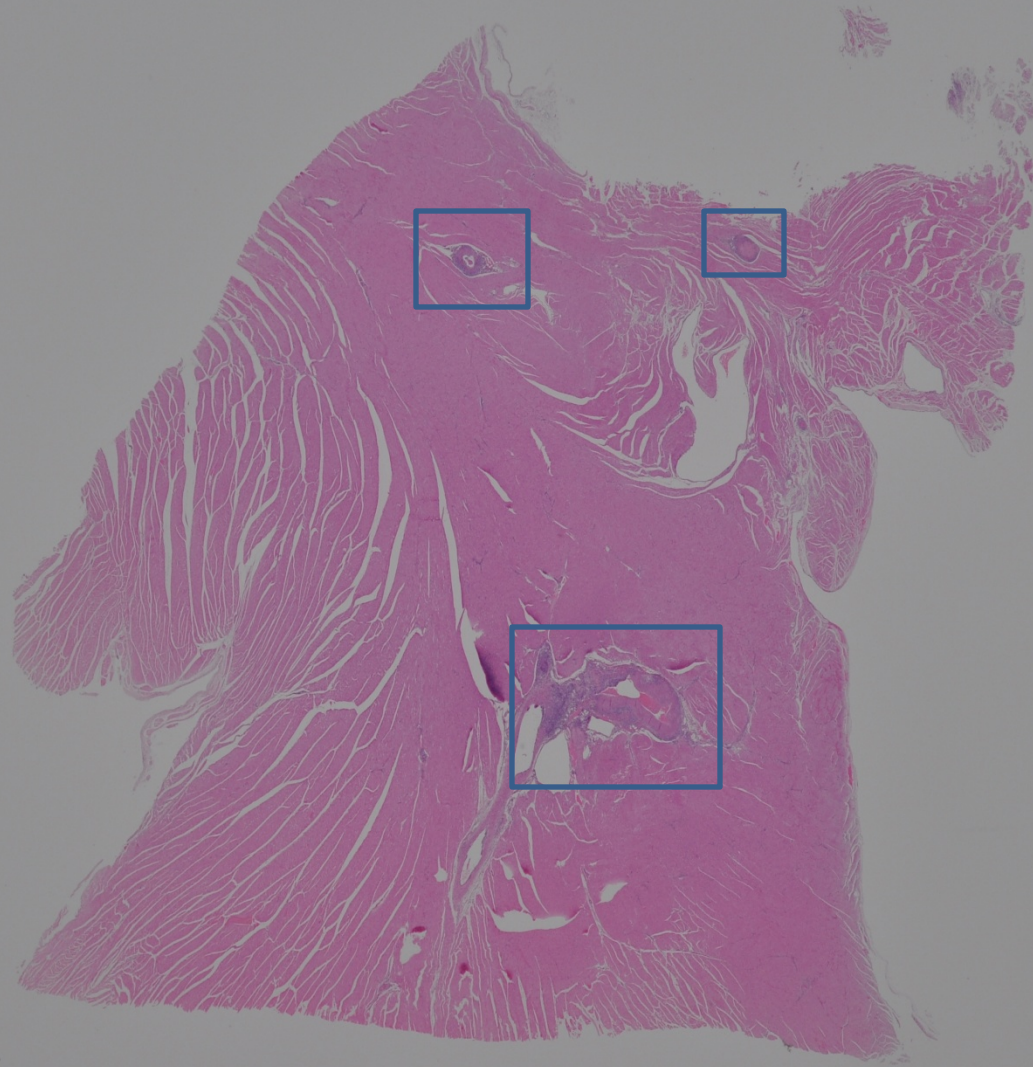


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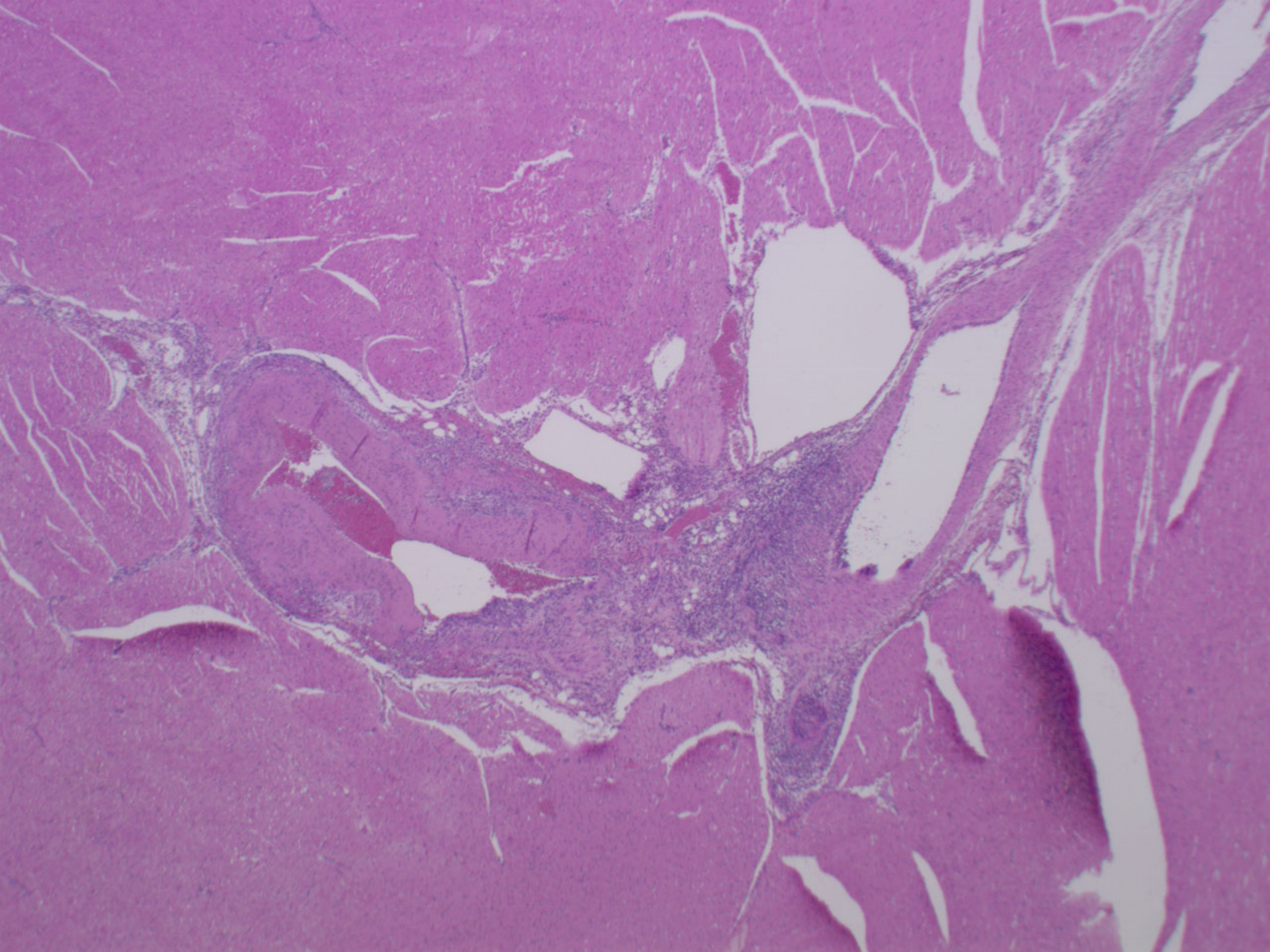
## Deer heart

Bat Otgontugs  
Bovine Pathology

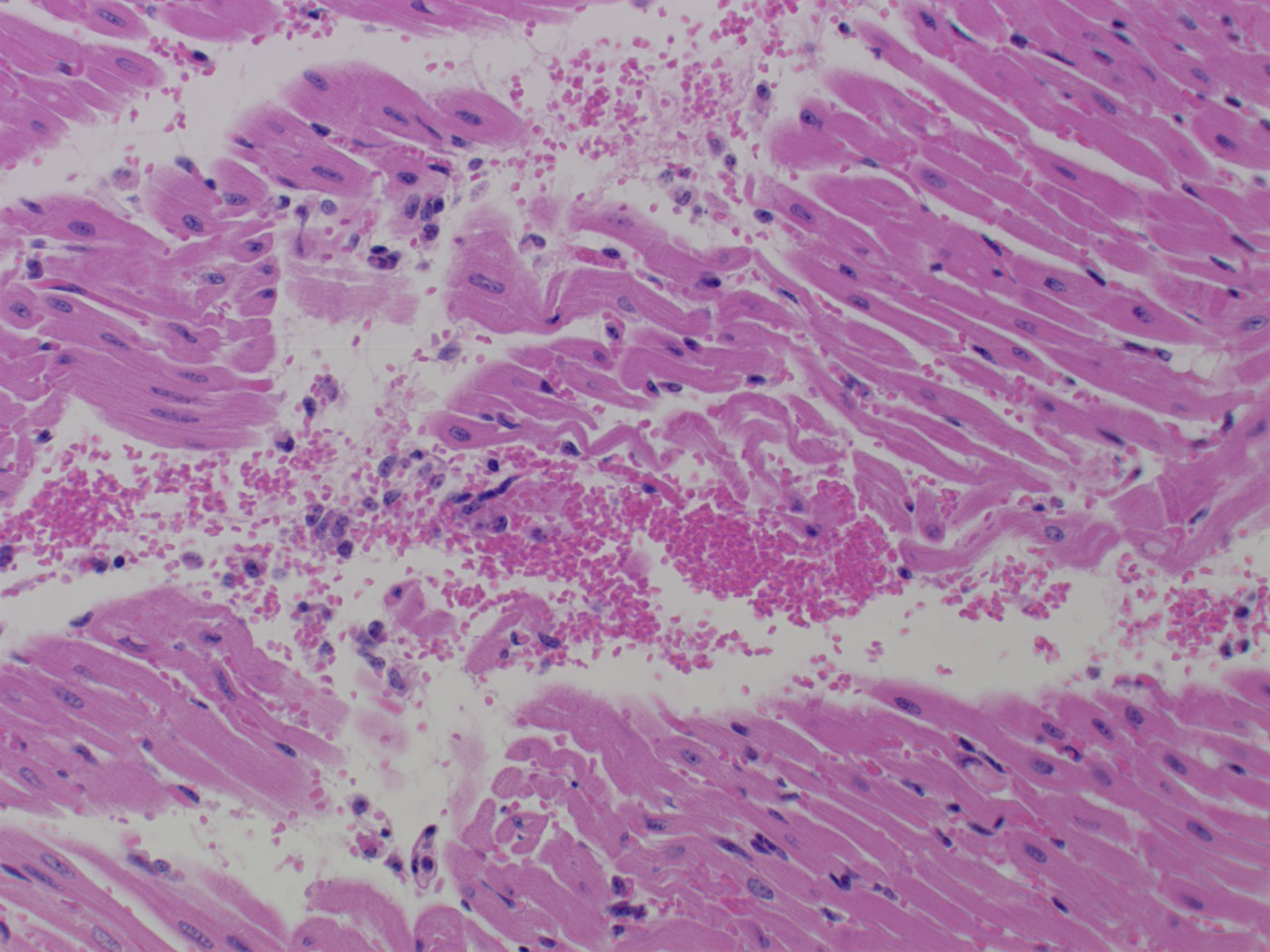
- **Contributor:** National Animal Disease Center, Ames, IA
- **Signalment:** 5-month old female white-tailed deer (*Odocoileus virginianus*).
- **History:** Observed depressed, listless. Physical exam revealed fever (102.5 F), mild dehydration, normal auscultation of heart and lungs, no evidence of diarrhea. Treated with IV fluids, antibiotics and a nonsteroidal anti-inflammatory drug. Deer died within 5 hours.
- **Gross pathology:** The deer was of normal body condition with adequate deposits of body fat. There was crusty exudate around the eyes. Multifocal areas of hemorrhage were seen in the heart (epicardial and endocardial), lungs, kidney, adrenal glands, spleen, small and large intestines (mucosal and serosal surfaces) and along the mesenteric border, mesenteric lymph nodes. Multifocal ulcers were present in the pyloric region of the abomasum.
- **Histopathologic Description:** Within the section of myocardium there is accentuation of medium to large arteries due to the infiltration of the vascular wall and perivascular spaces by inflammatory cells. Numerous lymphocytes and fewer neutrophils invade, and in some cases, efface the vessel wall. Within the myocardium are multifocal areas of hemorrhage and scattered infiltrates of lymphocytes and macrophages.



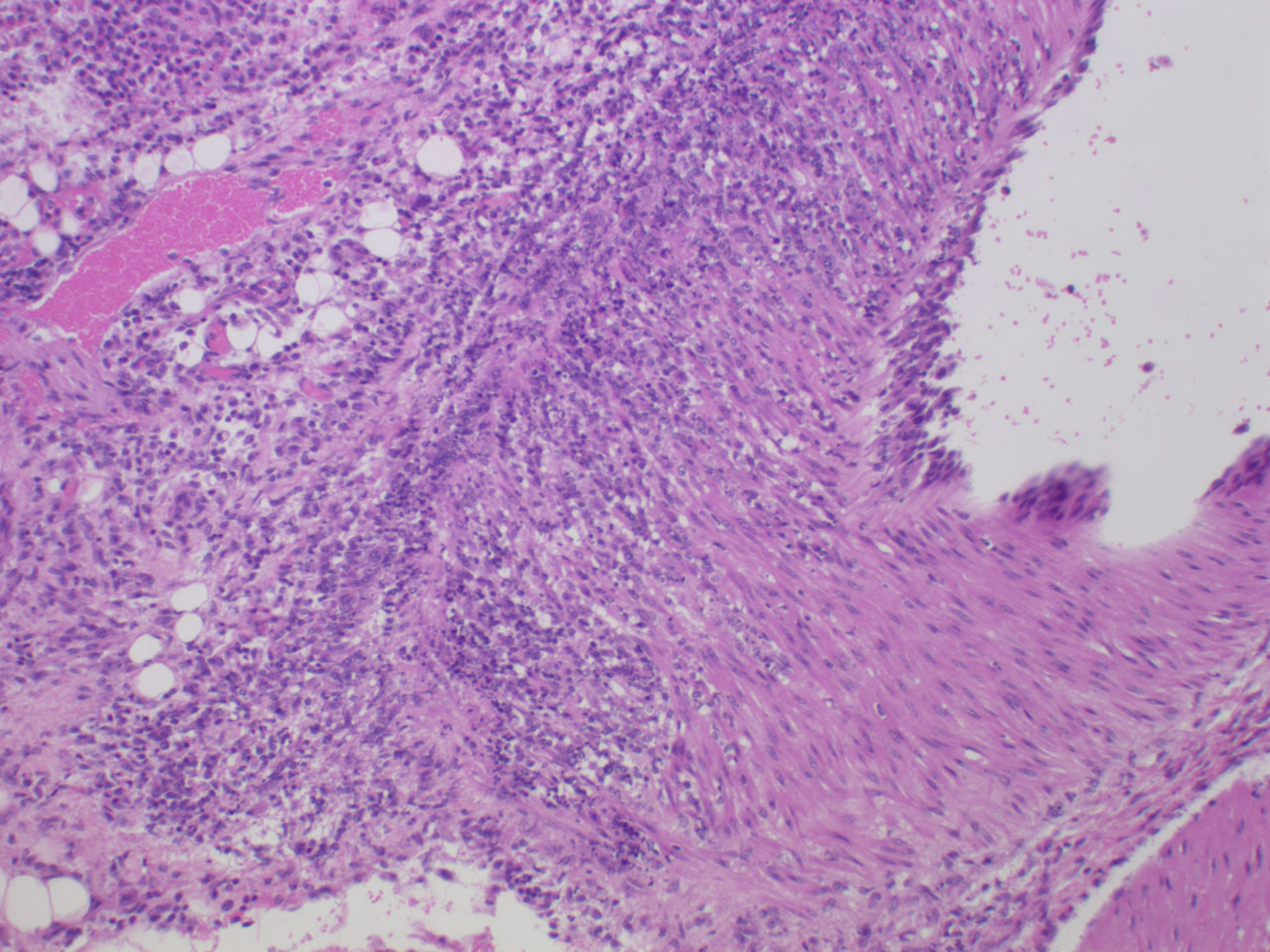




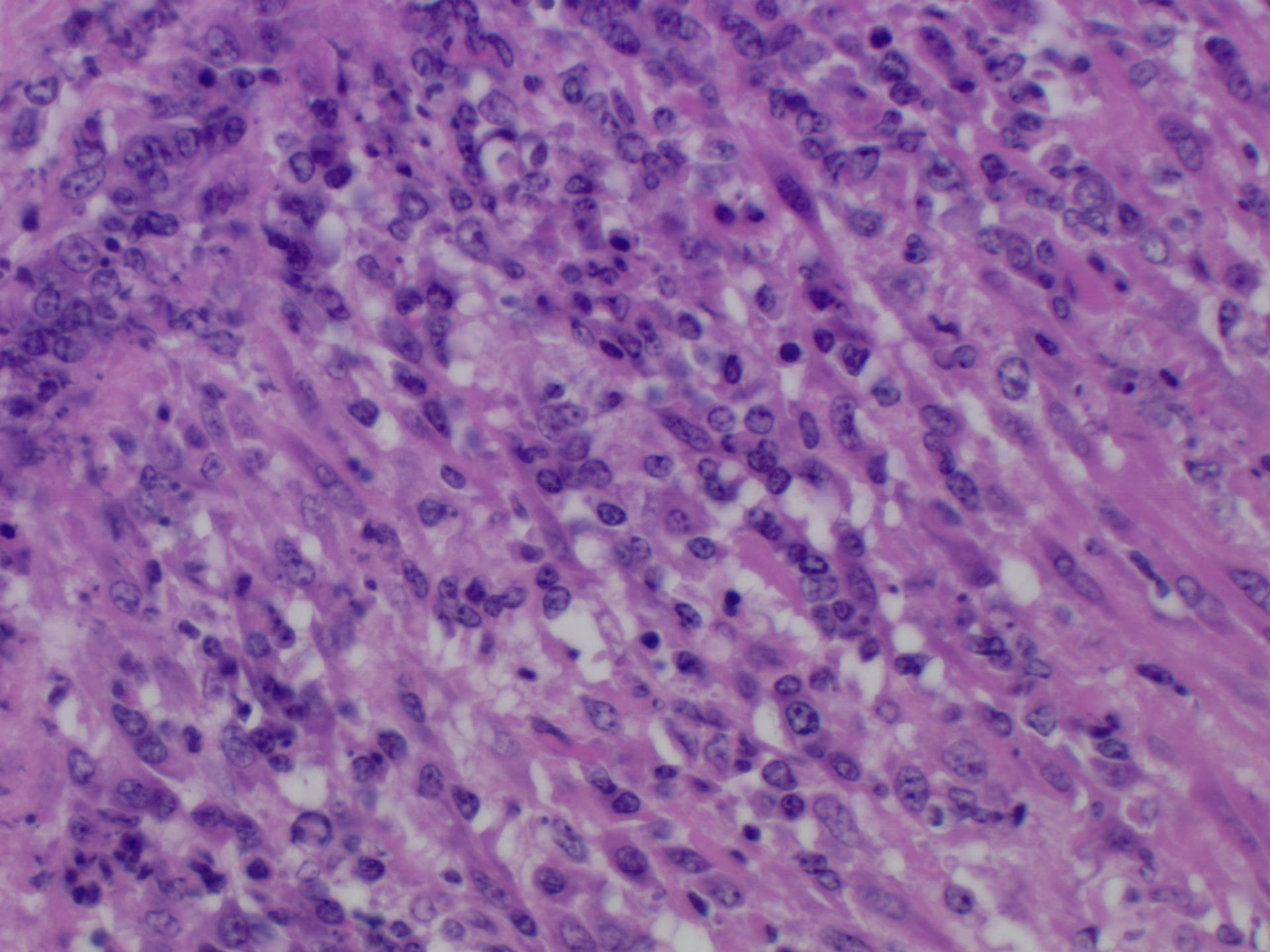




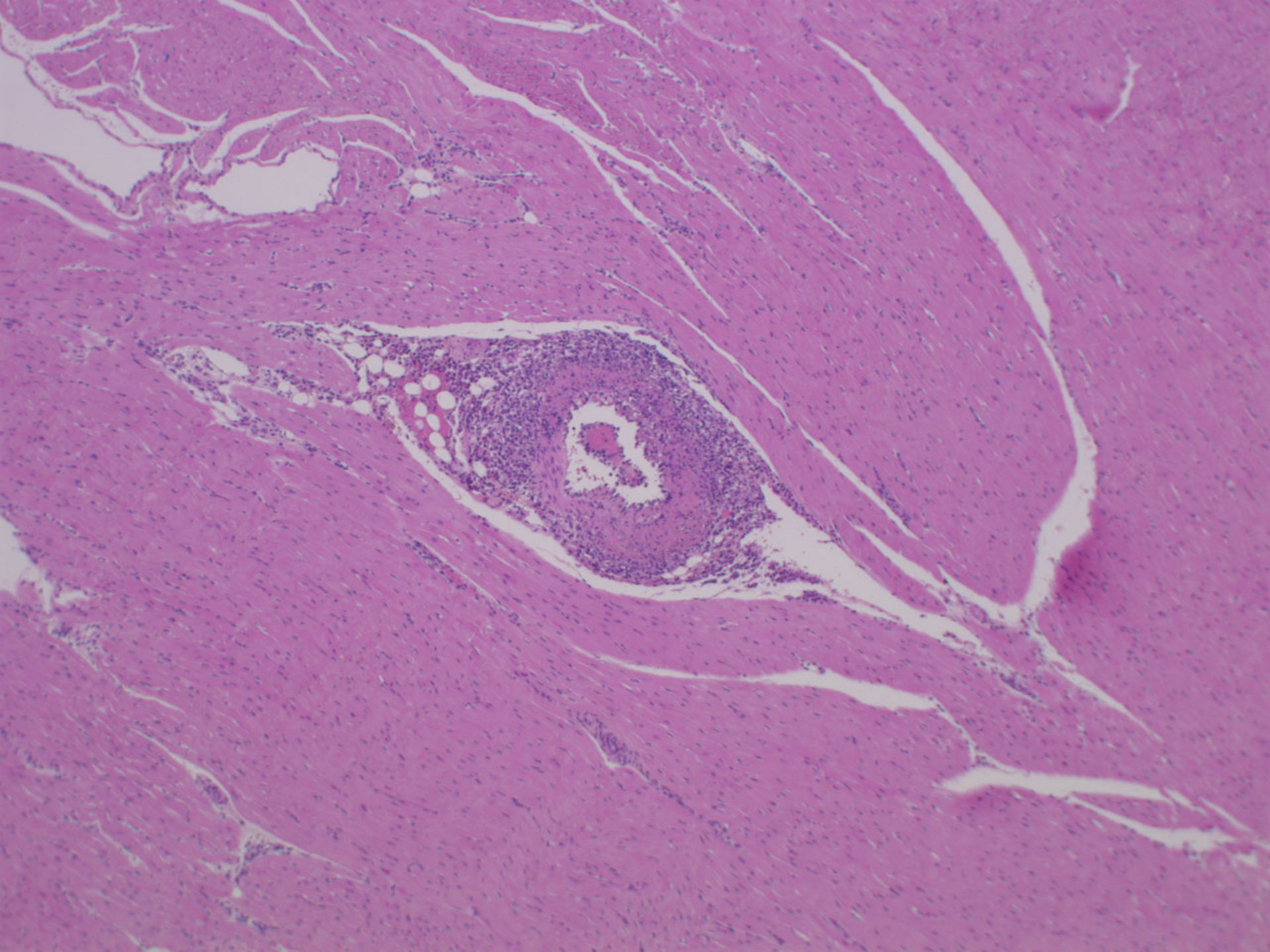




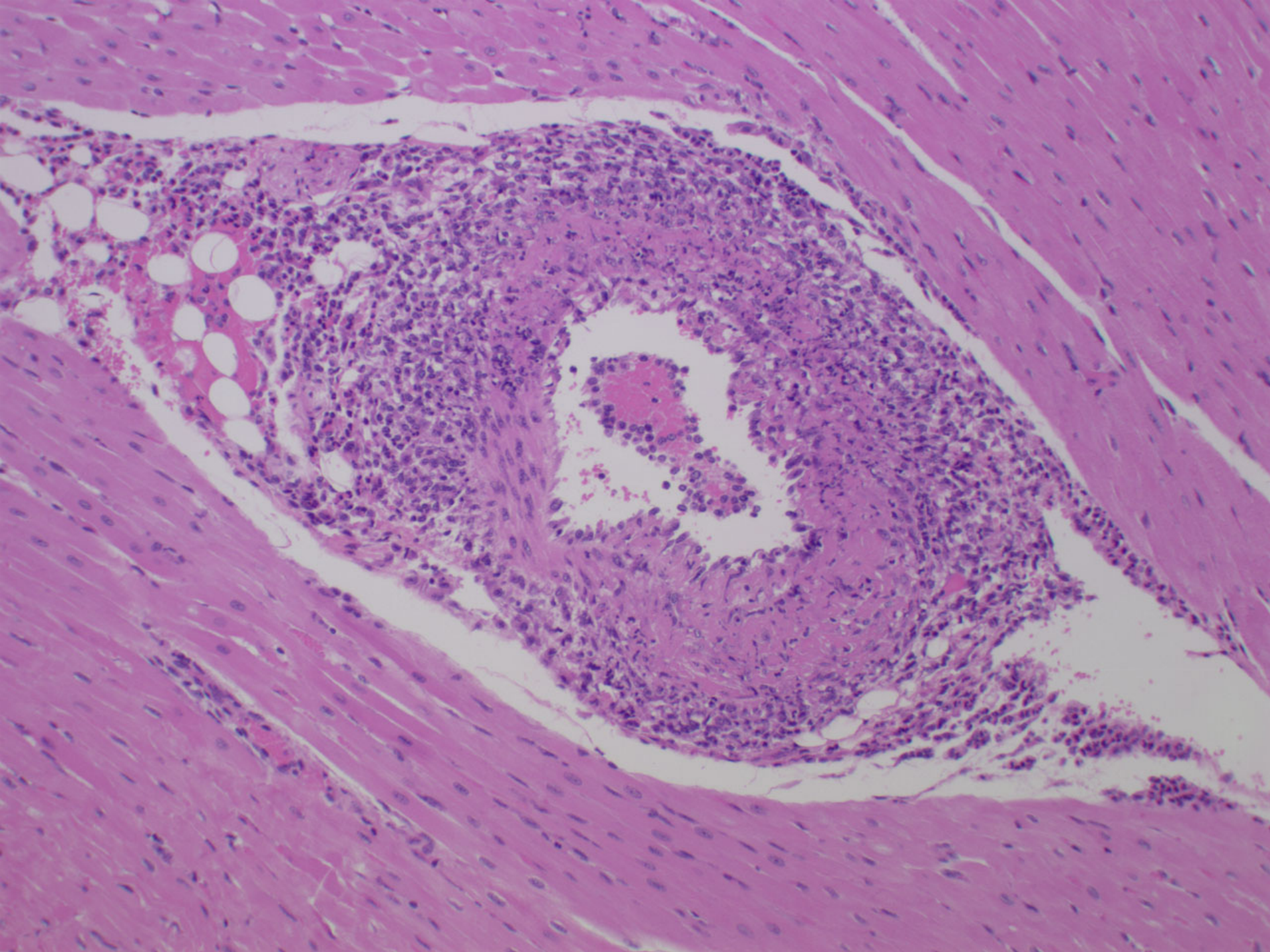




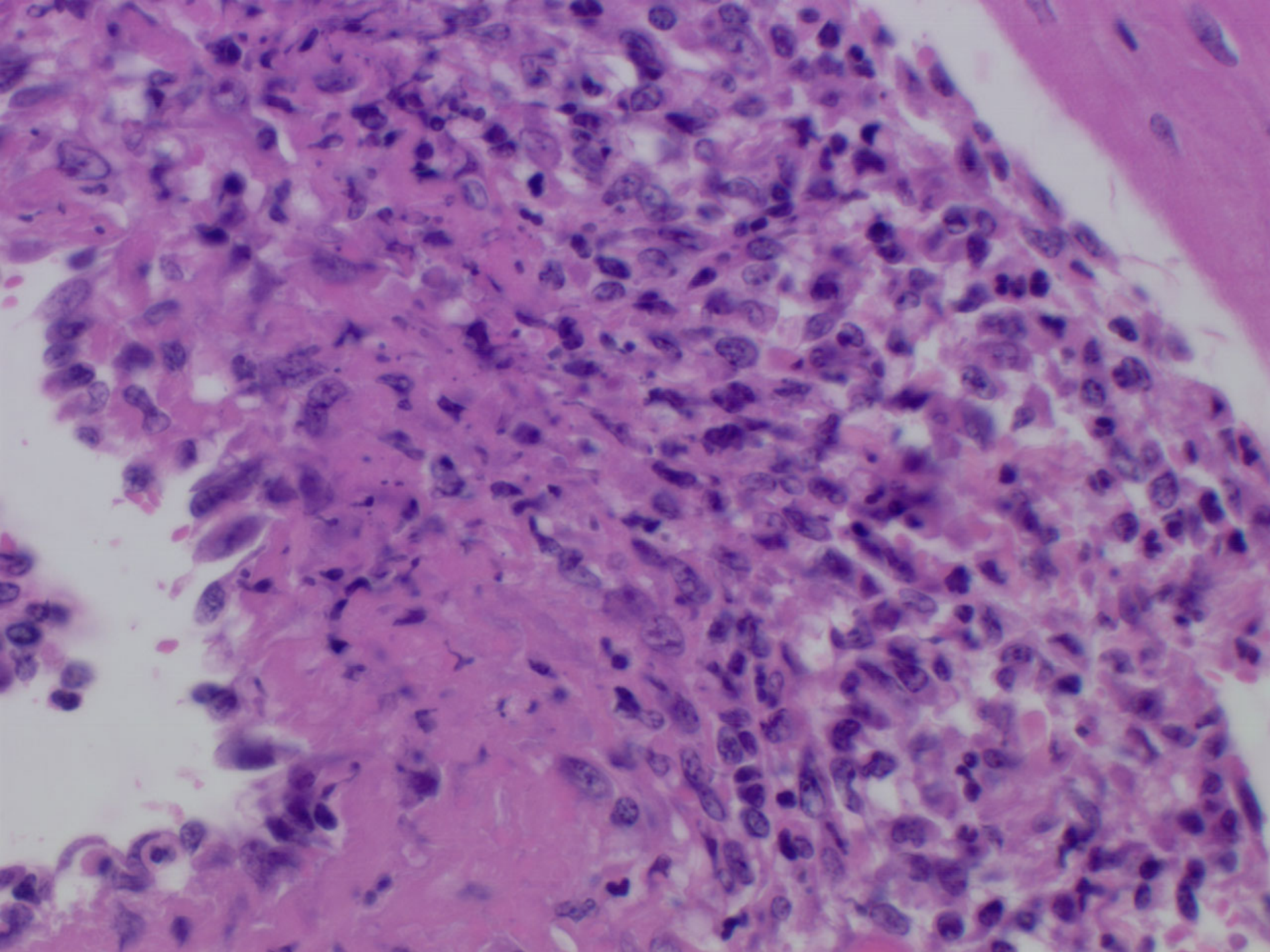




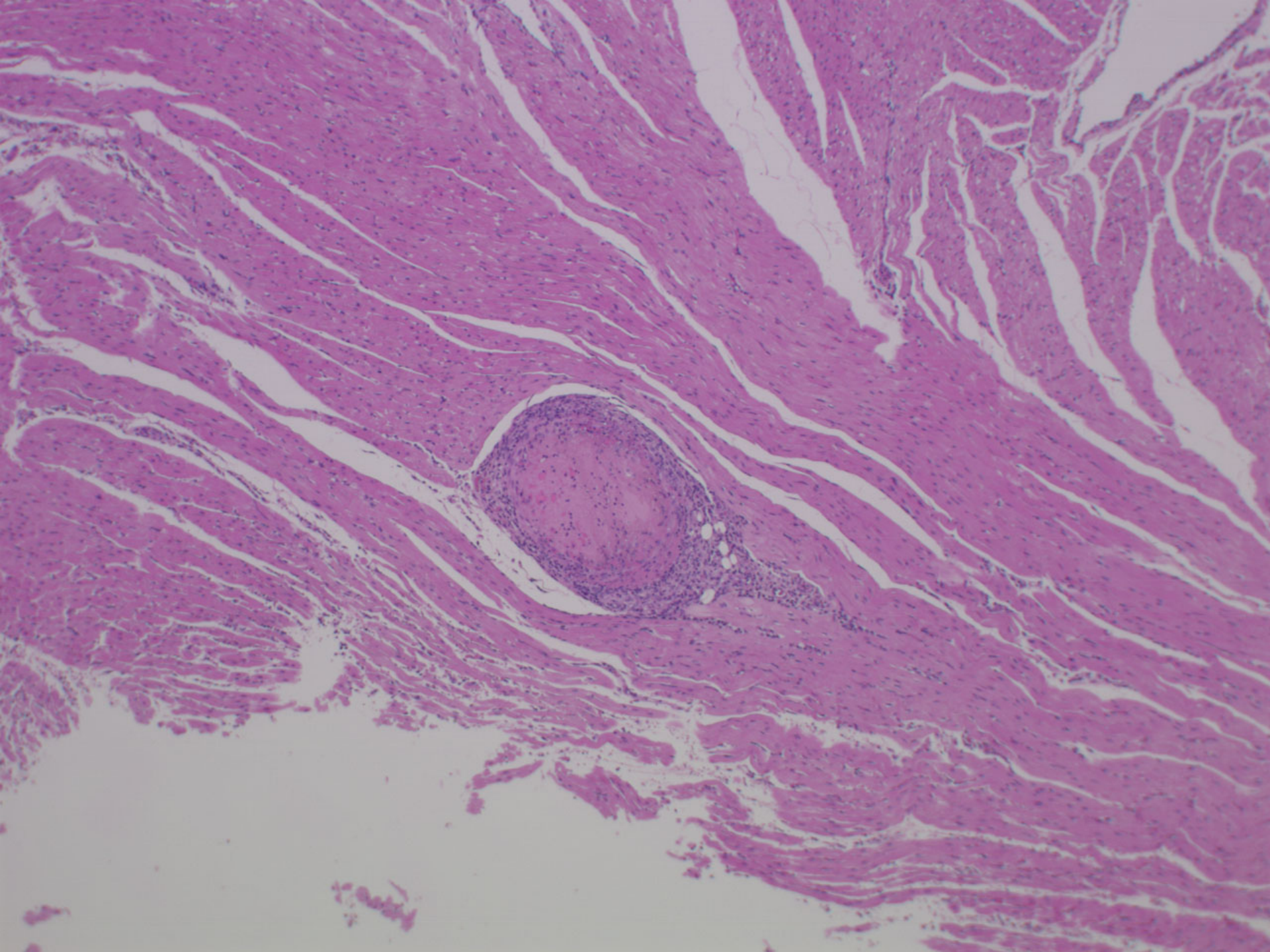




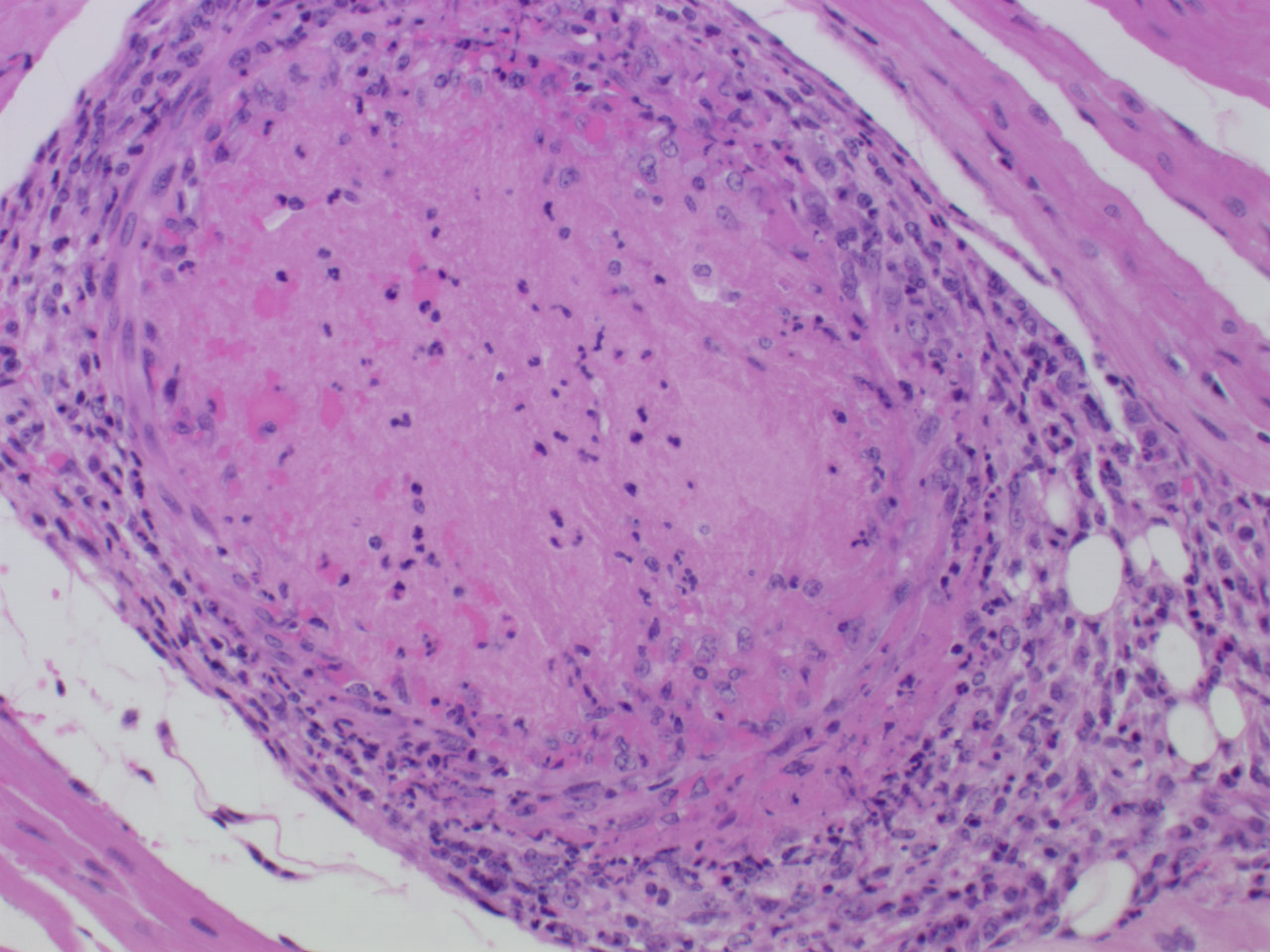




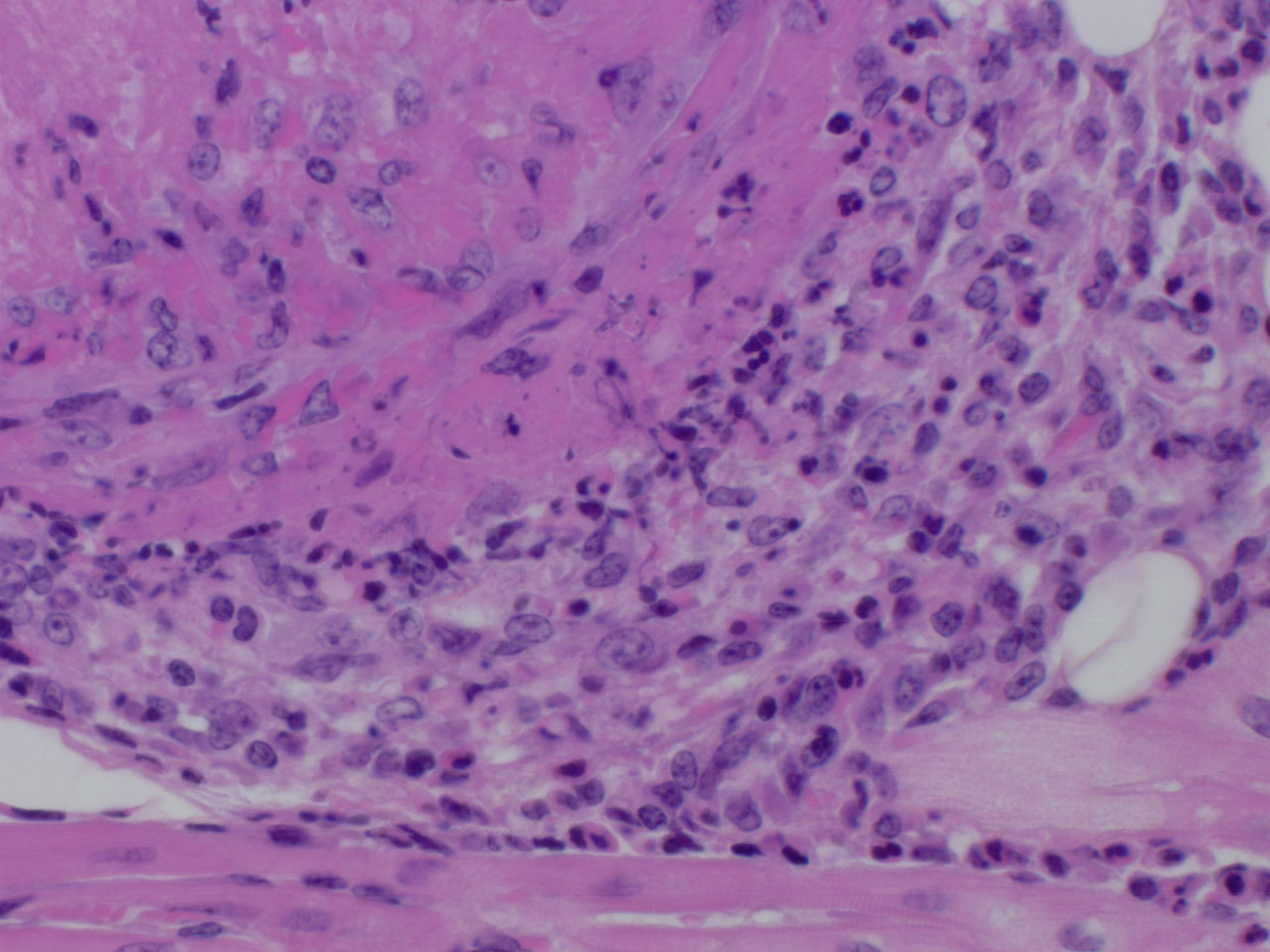














- **Contributor's Morphologic Diagnosis:** Myocardium: Arteritis and periarteritis, fibrinonecrotic, lymphocytic, multifocal, acute, moderate to severe, with fibrinoid degeneration, thrombosis and myocardial hemorrhage, white-tailed deer (*Odocoileus virginianus*).

- **Contributor's comments:**

- Malignant catarrhal fever (MCF) is the clinical manifestation of the infection of certain ruminant species with one of a group of pathogenic gammaherpesviruses known as MCF viruses.

- The disease is characterized primarily by lymphoproliferation, mucosal inflammation and vasculitis.

- Deer infected with OvHV-2 can have a variety of clinical signs.

Typically, the affected animal is lethargic, febrile with diarrhea that is often watery or contains blood. Death usually occurs within 48 hours. Animals that live longer may have excessive watery to mucous discharge from the eyes, mouth and nose. Mucosal erosions or ulceration may be present in the nose, oral cavity or anywhere in the gastrointestinal tract. Corneal opacity may lead to blindness in one or both eyes.



- **JPC Diagnosis:** Heart: Arteritis, necrotizing and proliferative, multifocal, severe, with thrombosis and mild multifocal myocarditis.
- **Conference comments:**
  - Histologically, malignant catarrhal fever (MCF) typically presents as perivascular and intramural infiltrates of lymphocytes and lymphoblasts with accompanying fibrinoid necrotizing vasculitis, which is unique to this disease. Conference participants noted that this particular case was difficult, because the mononuclear cell infiltrate was not easily identifiable as lymphoblastic. For this reason, polyarteritis nodosa, a noninfectious proliferative and necrotizing vasculitis which occurs sporadically in all species of domestic animals, was also considered in the differential diagnosis.
  - In MCF, the virus is usually associated with lymphocytes in adults, and primary viral replication occurs in small and medium-sized lymphocytes. T-lymphocyte proliferation is likely secondary to infection of large granular lymphocytes, which have T-suppressor cells and natural killer cell activity. Viral infection and dysfunction of these cells causes lymphoproliferation, T-suppressor cell dysfunction, and necrosis. The vasculitis is presumed to be immune mediated, but demonstration of immunoglobulin and complement components has been inconsistent.