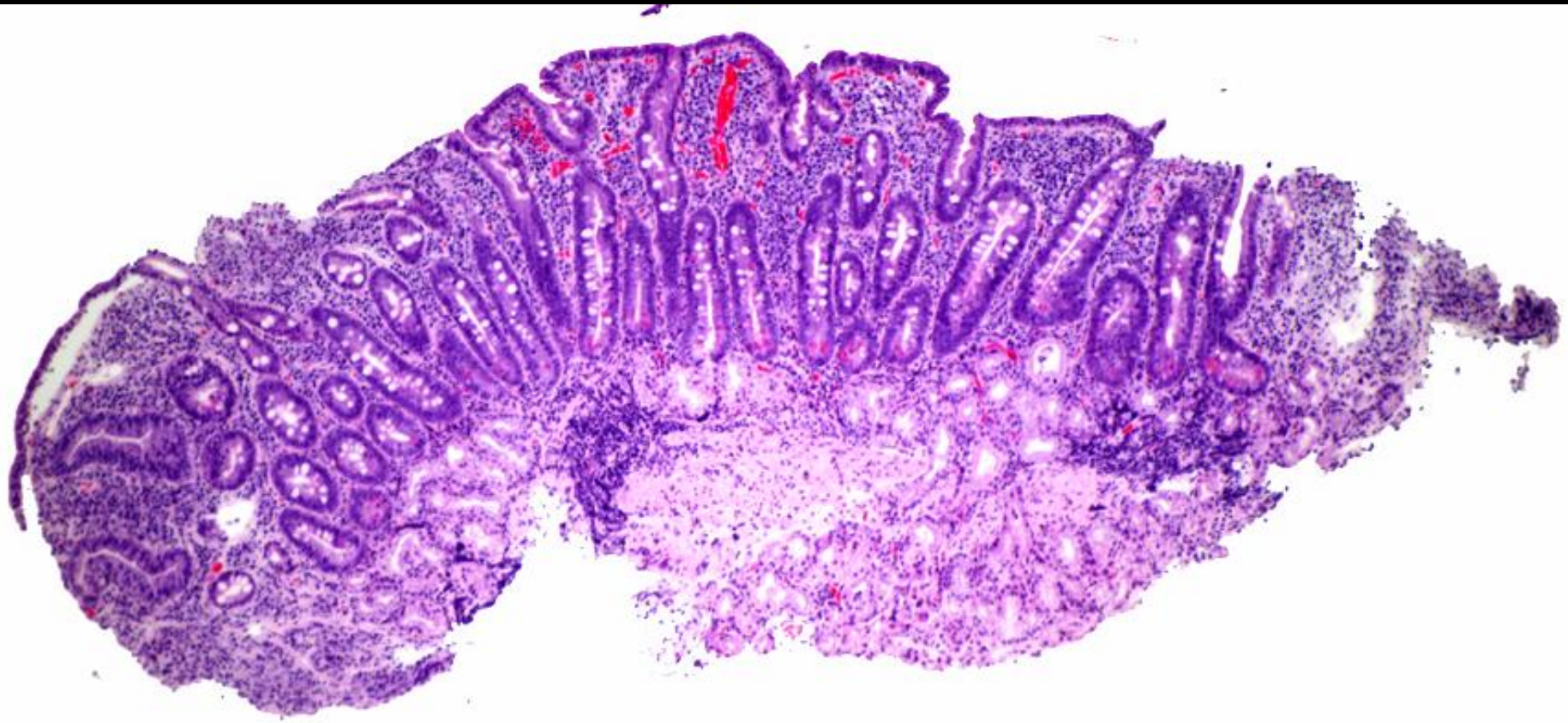
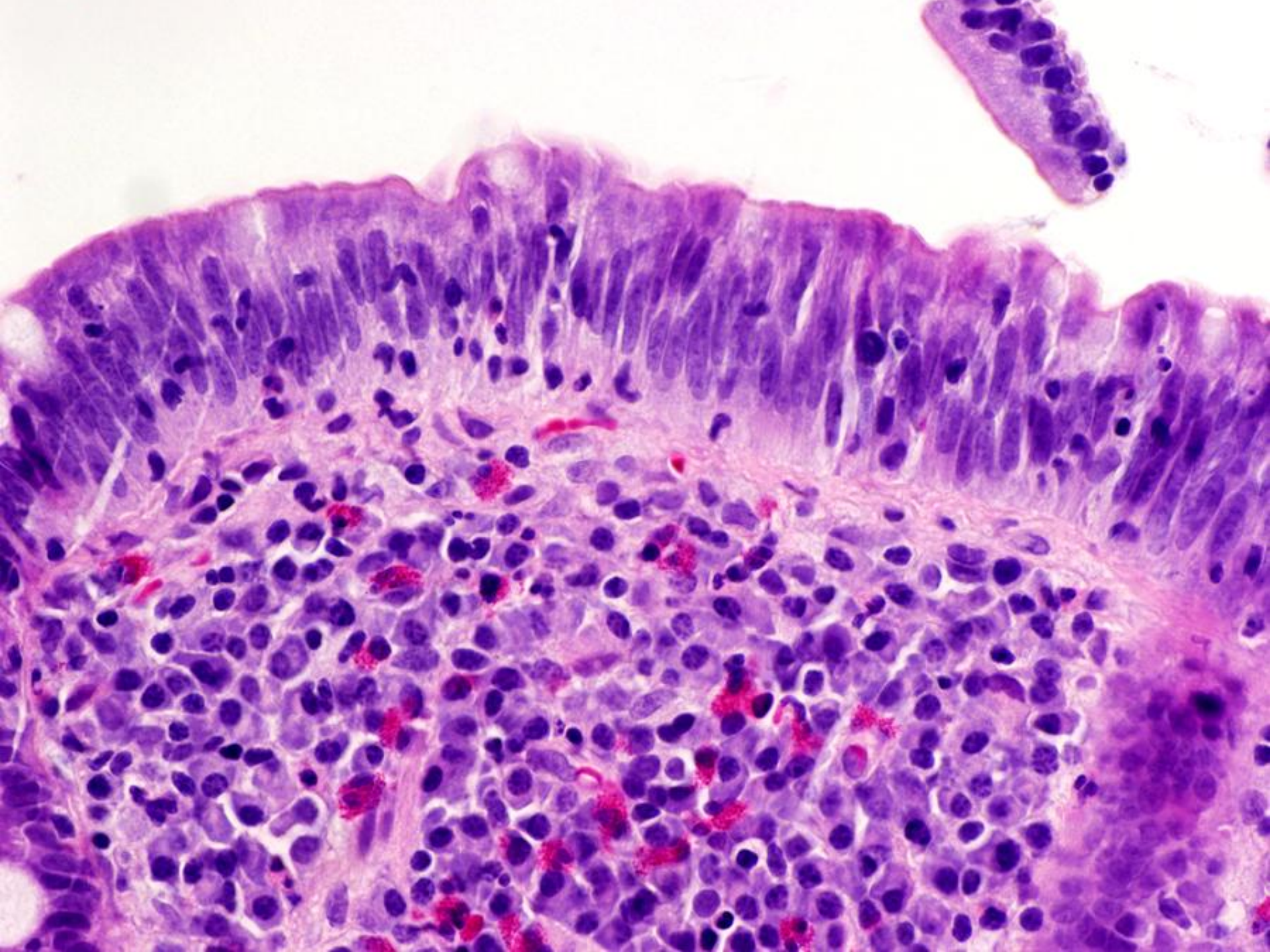
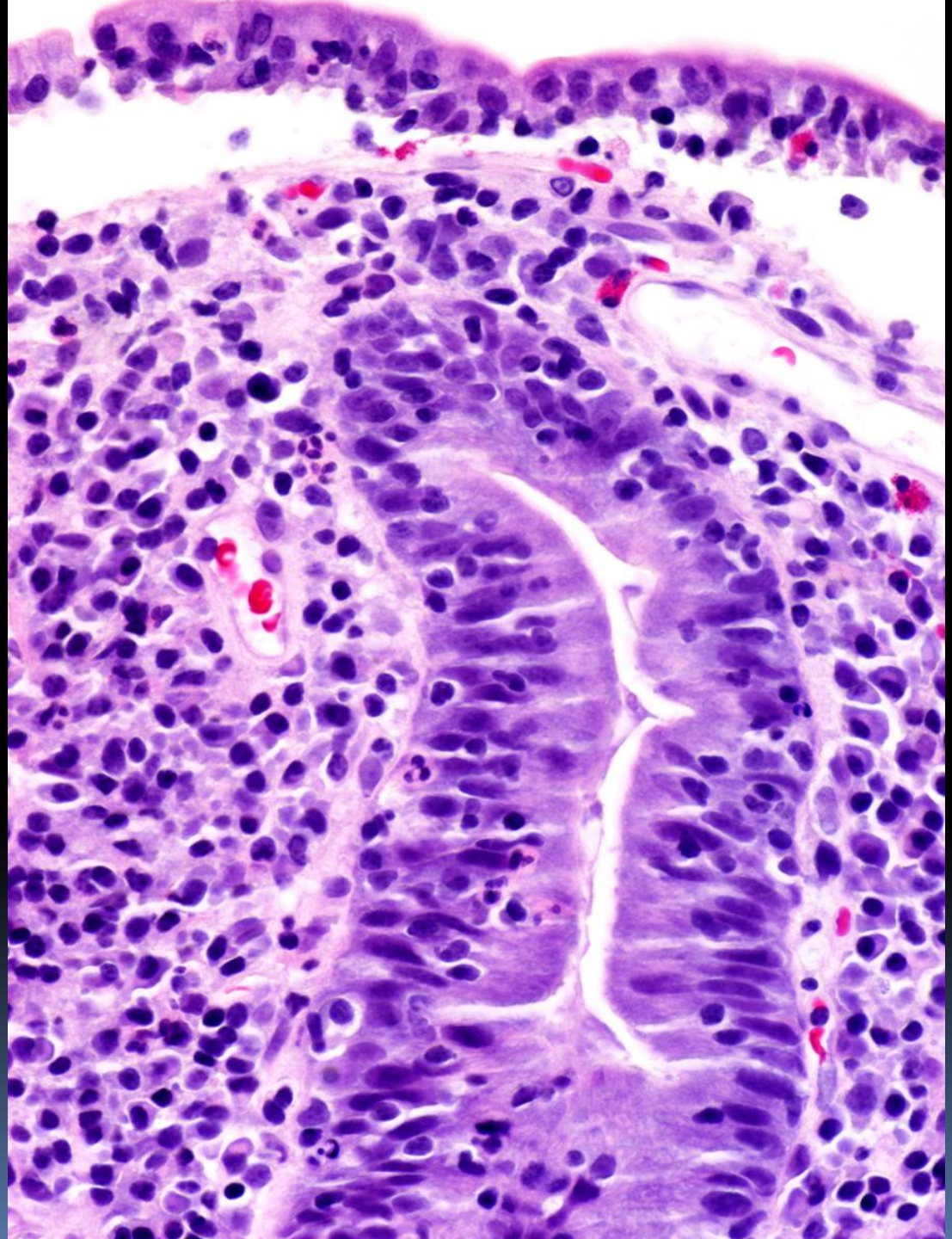
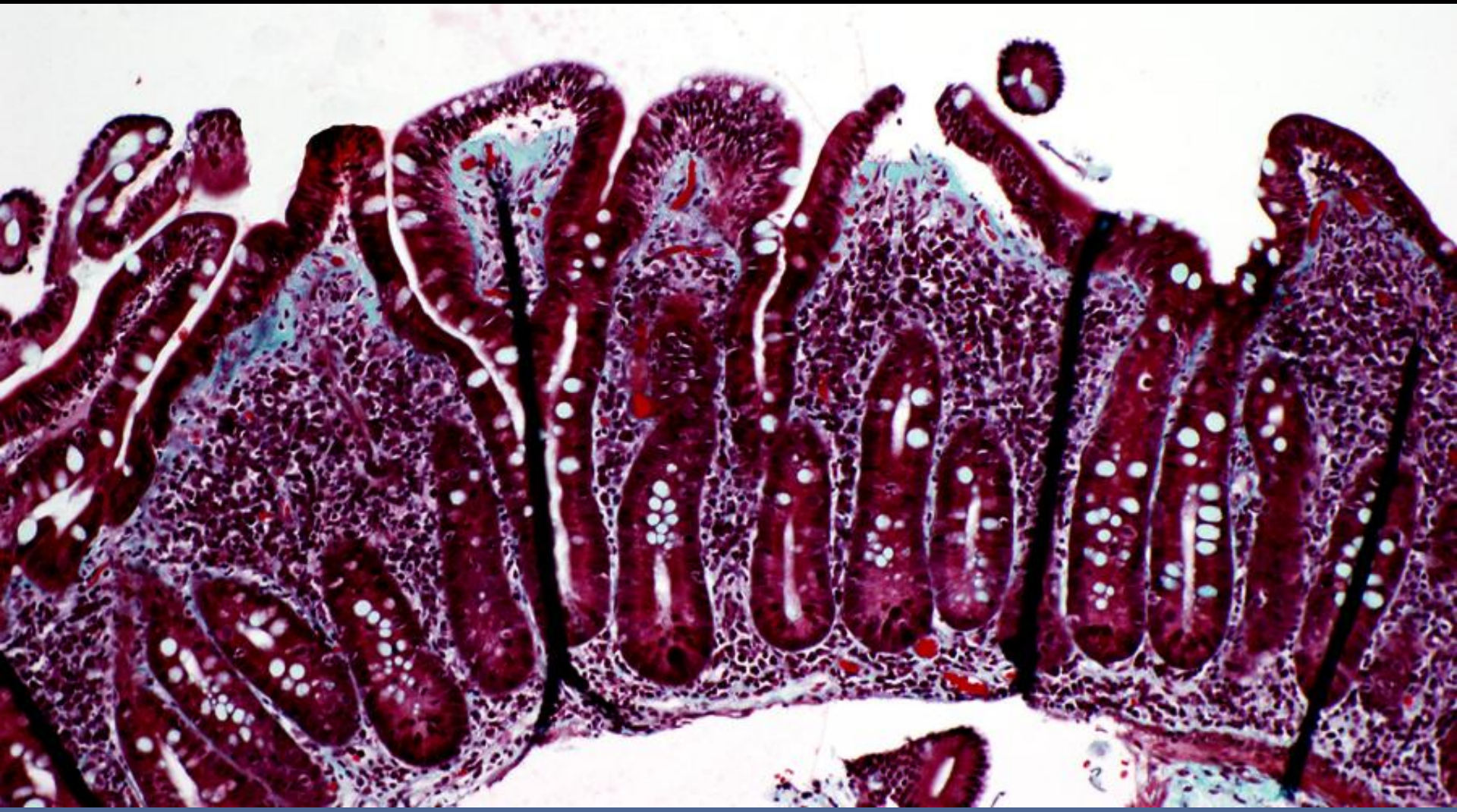
Duodenal bulb







Trichrome



Further investigations

- Stool culture / O+P - negative
- *C. difficile* toxin negative
- TTG negative (IgA normal)

Resolution:

- This patient's diarrhea improved rapidly in hospital after one intervention
- Creatinine normalized with IV fluids
- Went home feeling well after 4 days

What was the intervention?

Discontinue Olmesartan

ORIGINAL ARTICLE

MAYO CLINIC

Severe Spruelike Enteropathy Associated With Olmesartan

Alberto Rubio-Tapia, MD; Margot L. Herman, MD; Jonas F. Ludvigsson, MD, PhD; Darlene G. Kelly, MD, PhD; Thomas F. Mangan, MD; Tsung-Teh Wu, MD, PhD; and Joseph A. Murray, MD

Mayo Clin Proc. 2012;87(8):732-738

Spruelike enteropathy associated with Olmesartan

- 22 patients (47-81 years, 13 female)
- Taking olmesartan for mean 3.1 years (range 0.5-7.0 years)
- Diarrhea for median 19.2 months (range 3-53 months) with median 6 BMs/day (range 3-42)
- Weight loss – median 18 kg (range 2.5-57 kg)
- Vomiting, abdo pain >50% of cohort
- All negative for IgA TTG

Histologic findings in 22 duodenum biopsies:

- Villous atrophy
  - Total atrophy in 15
  - Partial atrophy in 7
- Subepithelial collagen in 7
- Increased intraepithelial lymphocytes in 14
- Active inflammation in 15

Histology at other sites:

Colon (13 underwent colonoscopy):

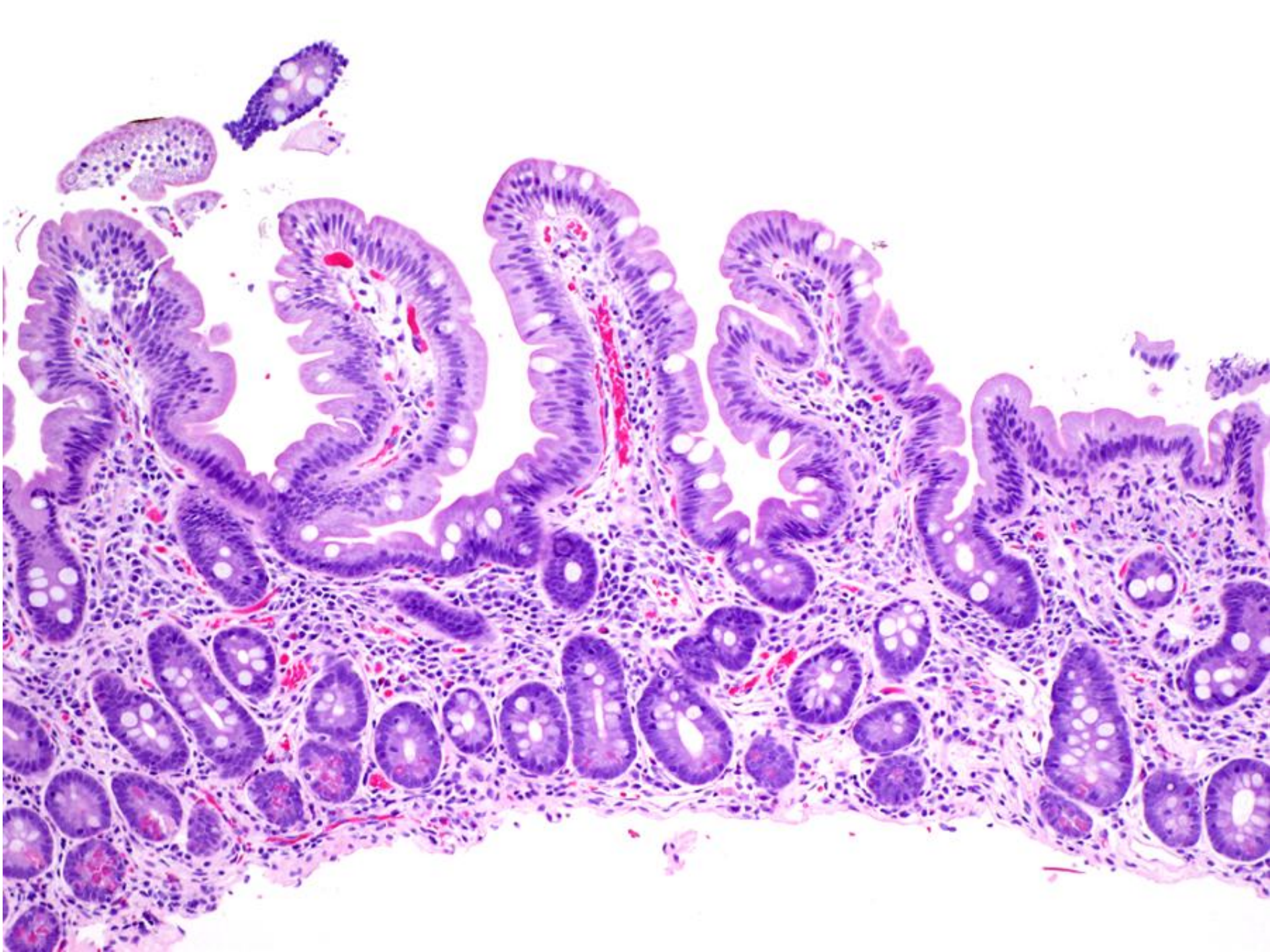
- 5 with microscopic colitis
  - 3 collagenous colitis
  - 2 lymphocytic colitis

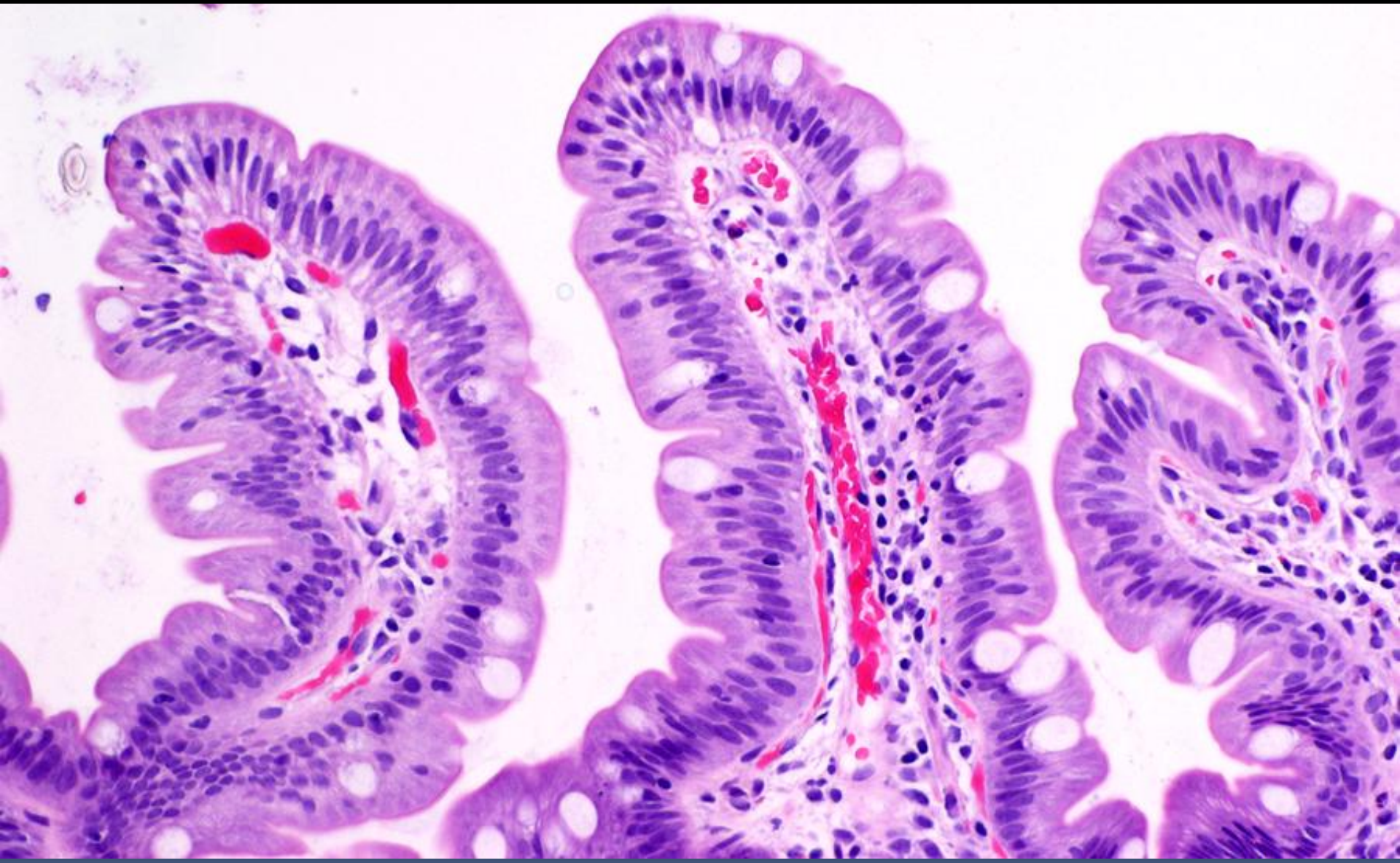
Stomach (14 had stomach biopsy)

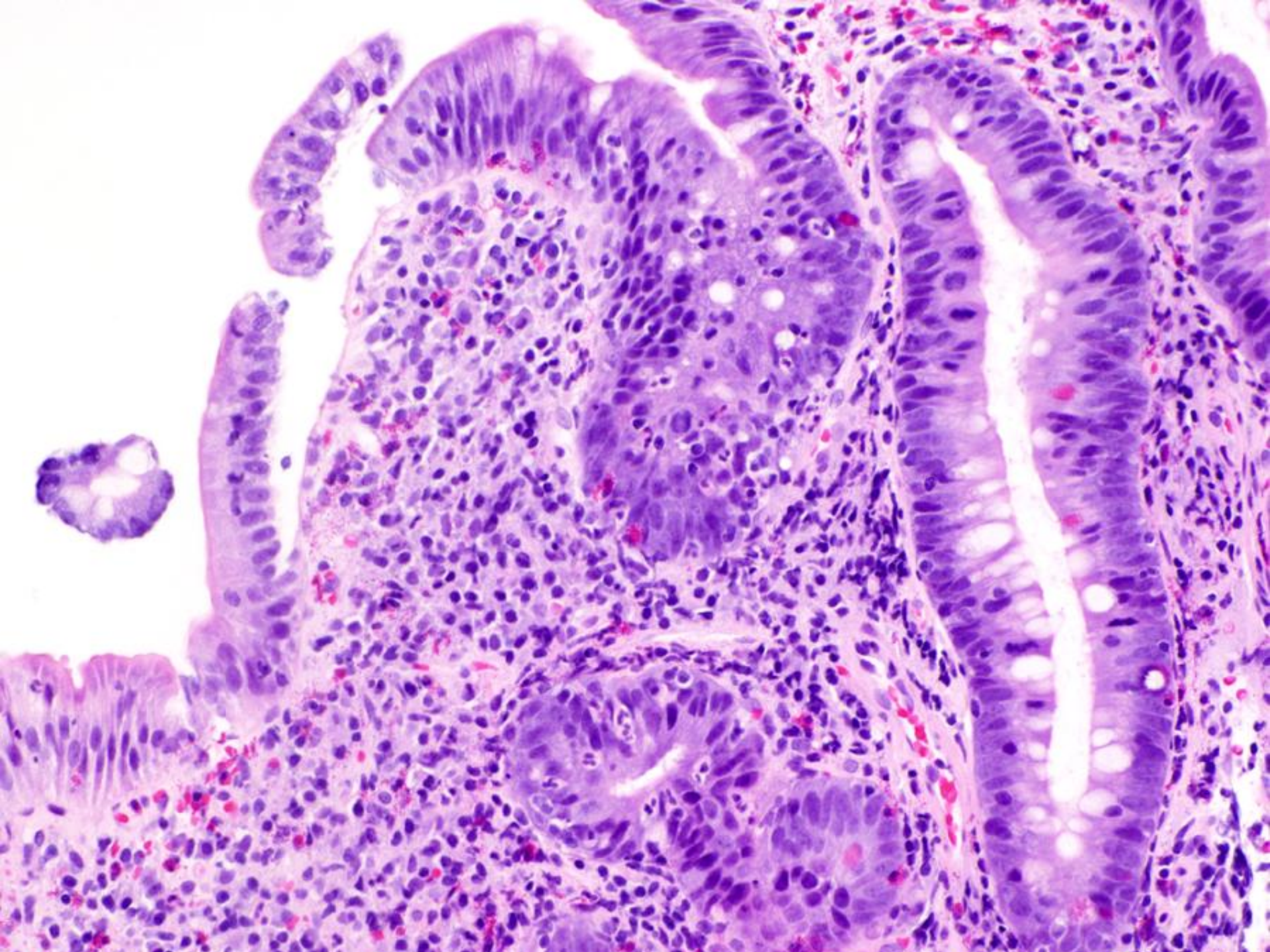
- 5 had lymphocytic gastritis
- 2 had collagenous gastritis
- Remaining 7 had chronic gastritis (1 *H. pylori*)

Treatment

- 20 had tried (failed) gluten free diet
- 20 had tried (failed) glucocorticoids
- All 22 responded to discontinuing olmesartan
- None relapsed after reintroducing gluten
- 18 patients had follow up biopsies, 17 were normal (1 had focal partial villous atrophy)
- None deliberately re-challenged with olmesartan







IMPORTANT: PLEASE READ

CONSUMER INFORMATION

PrOLMETEC®

(Olmesartan Medoxomil tablets)

WARNINGS AND PRECAUTIONS

OLMETEC® can cause severe chronic diarrhea with substantial weight loss (sprue-like enteropathy). It can take months to years for symptoms to develop.

MERCK

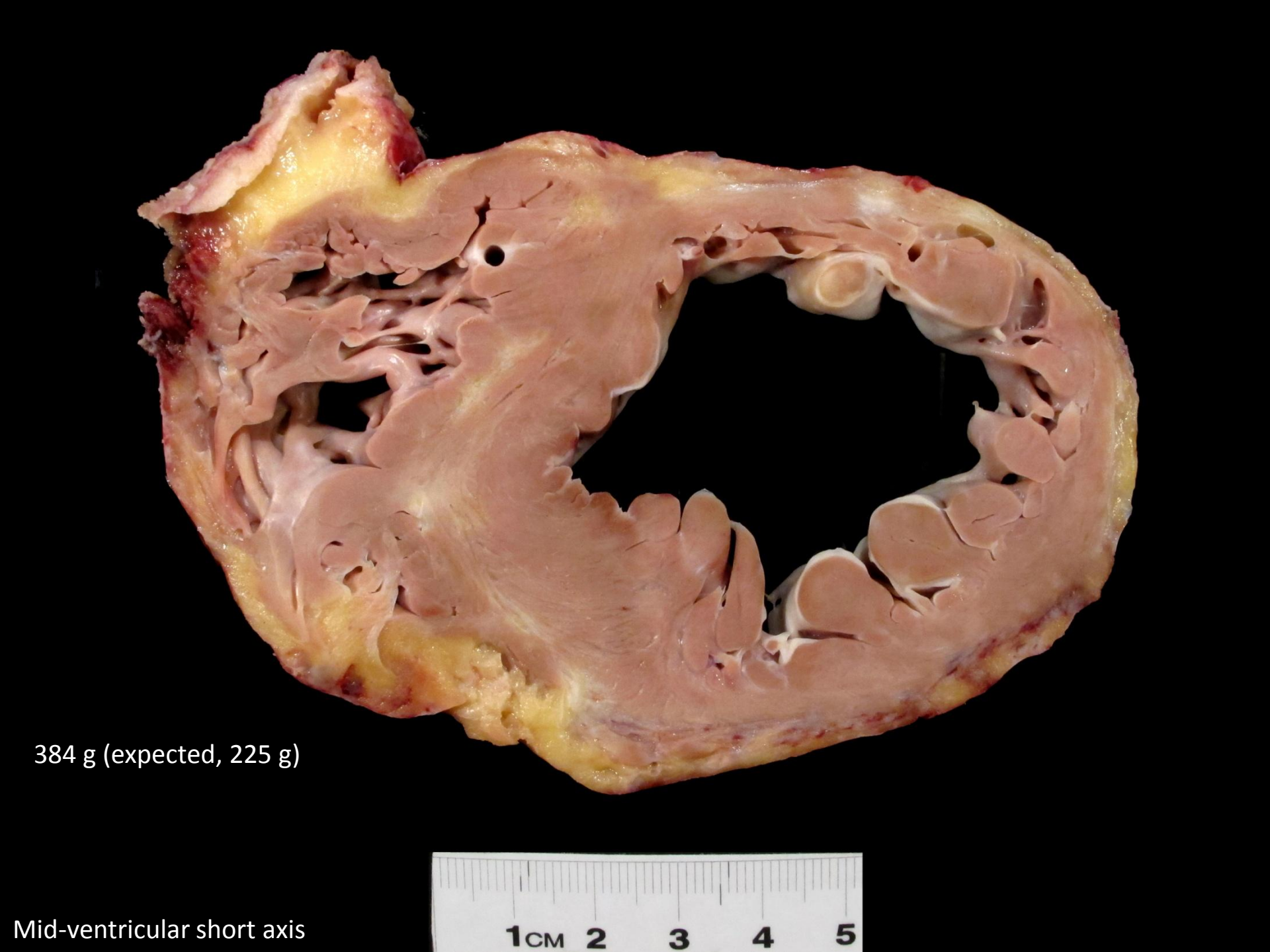
Questions?

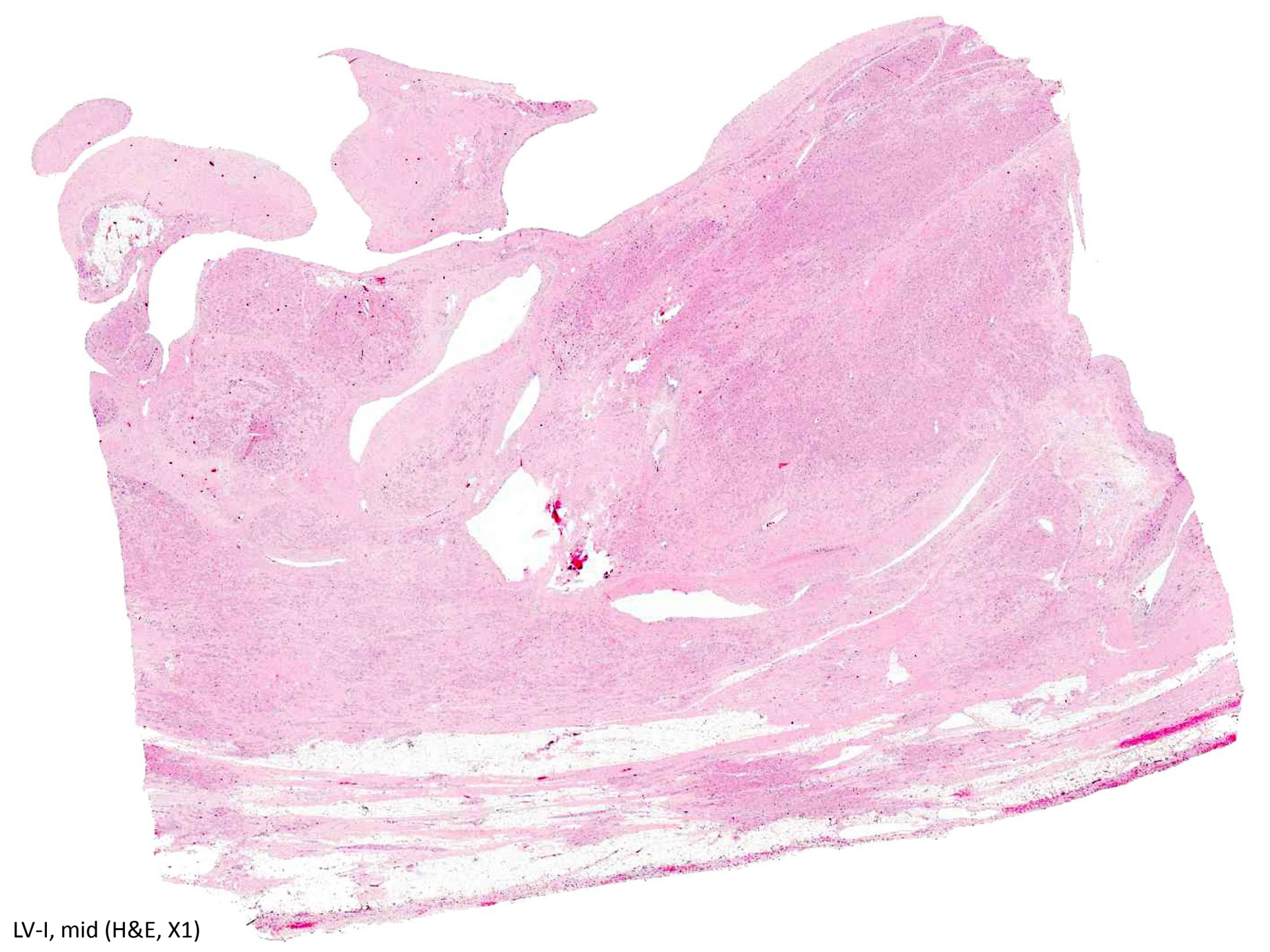
Acknowledgements:

Dr. John Igoe (Gastroenterology, QEII HSC)

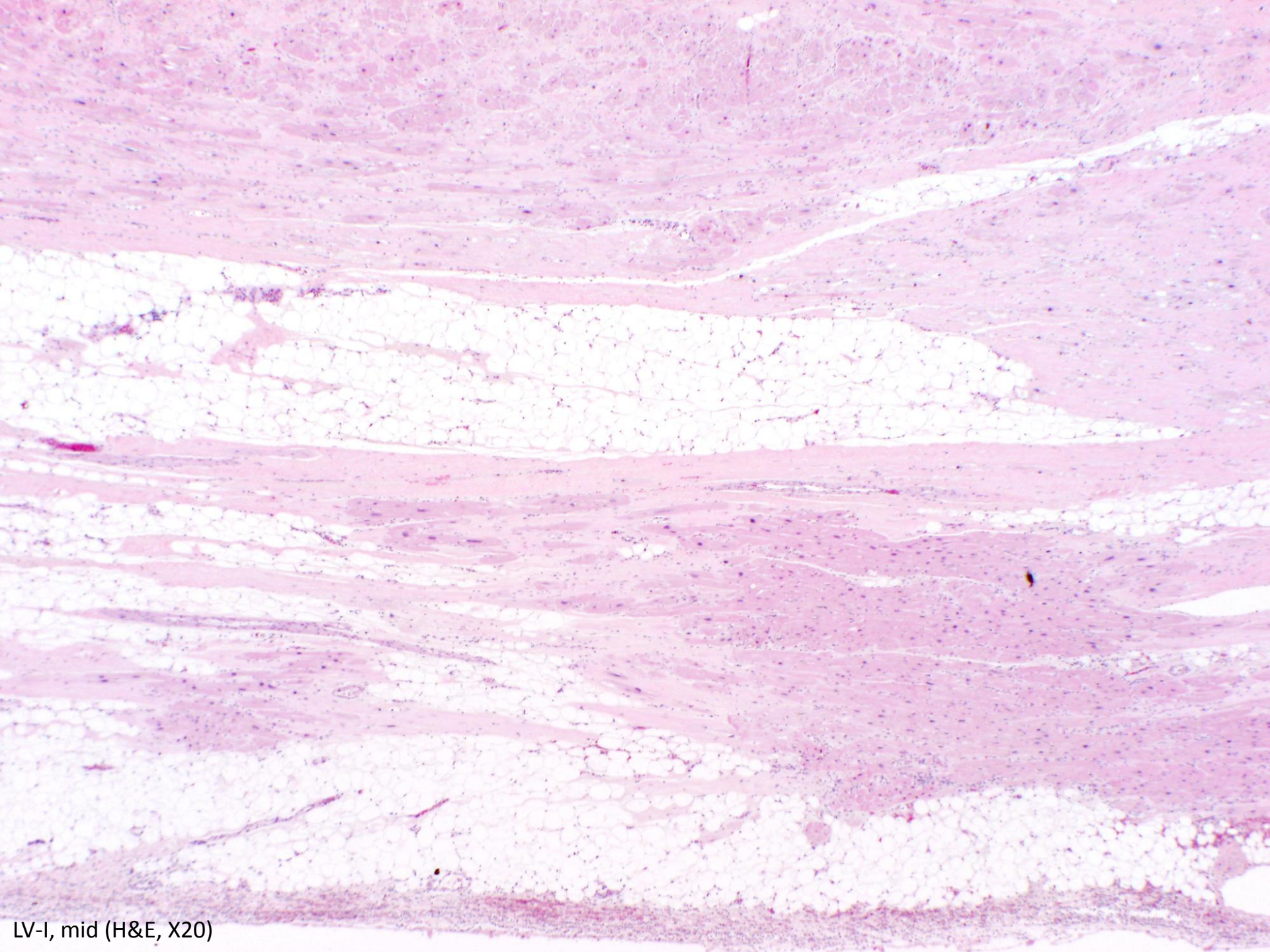
Case submitted by Dr. Mathieu Castonguay
Capital District Health Authority / Dalhousie University

- 55-year-old man with congestive heart failure, clinically attributed to “end-stage dilated cardiomyopathy”
- Supported by ICD and LVAD
- Undergoes cardiac allotransplantation

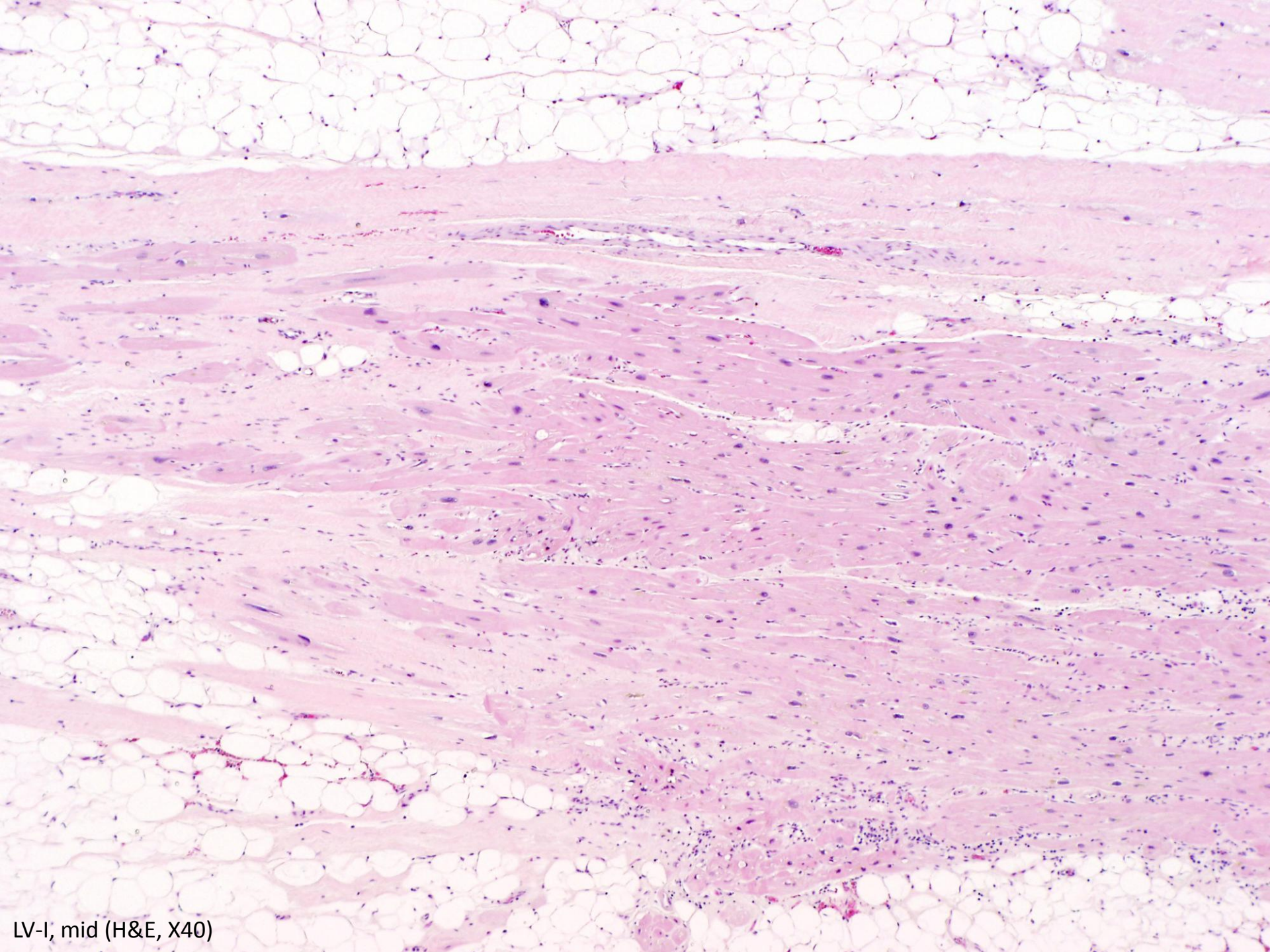

384 g (expected, 225 g)
1CM 2 3 4 5
Mid-ventricular short axis



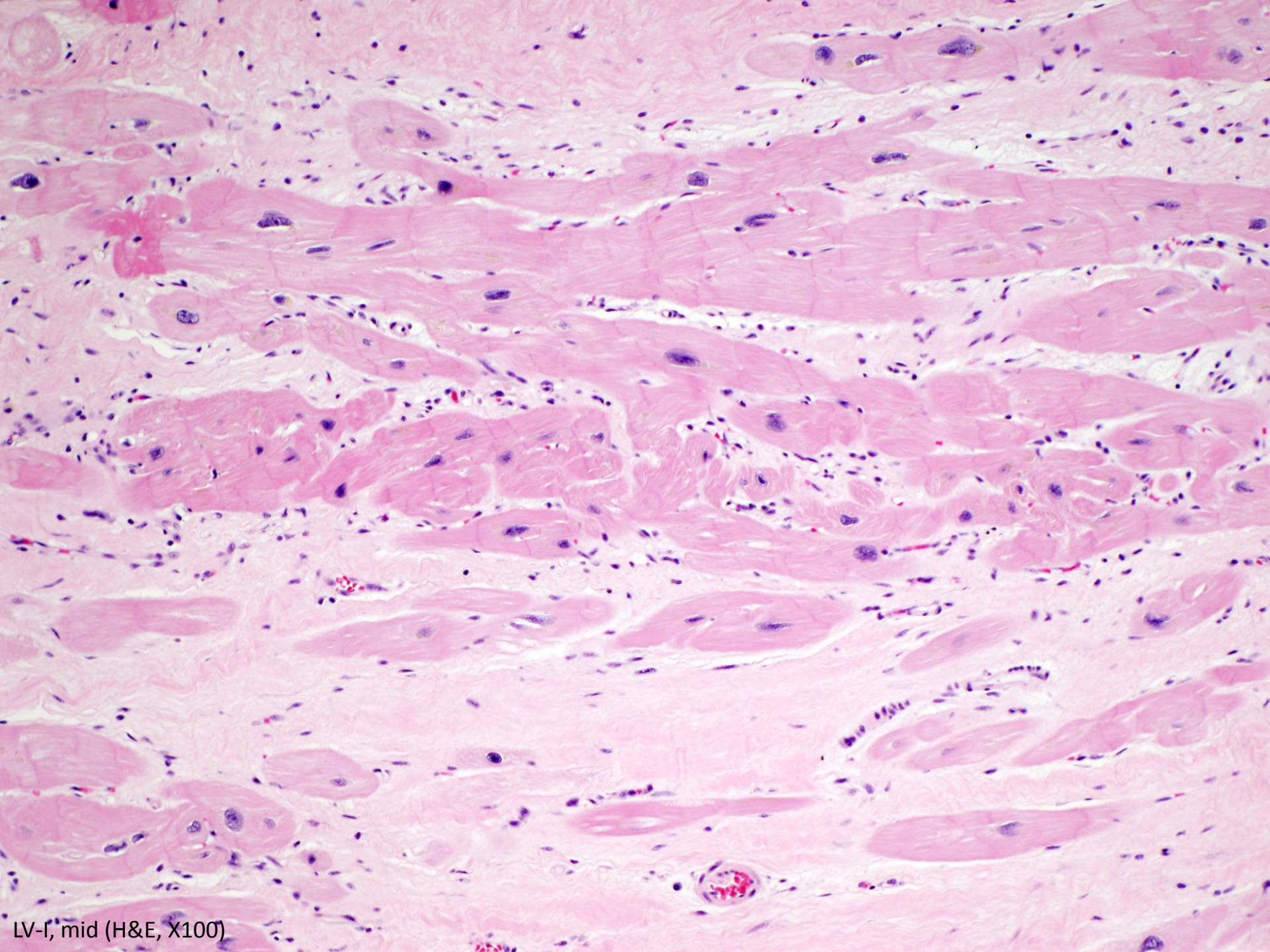
LV-I, mid (H&E, X1)



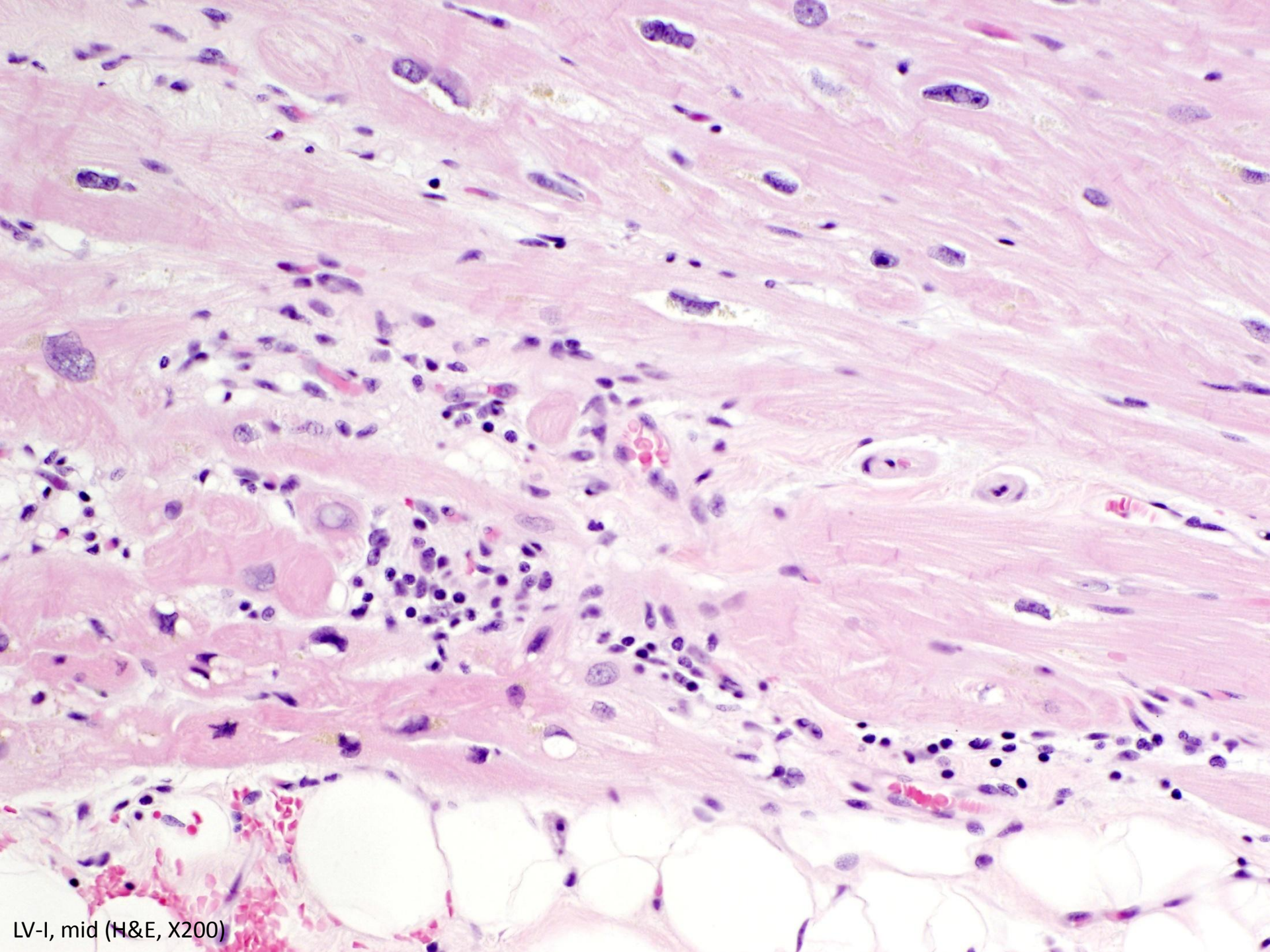
LV-I, mid (H&E, X20)



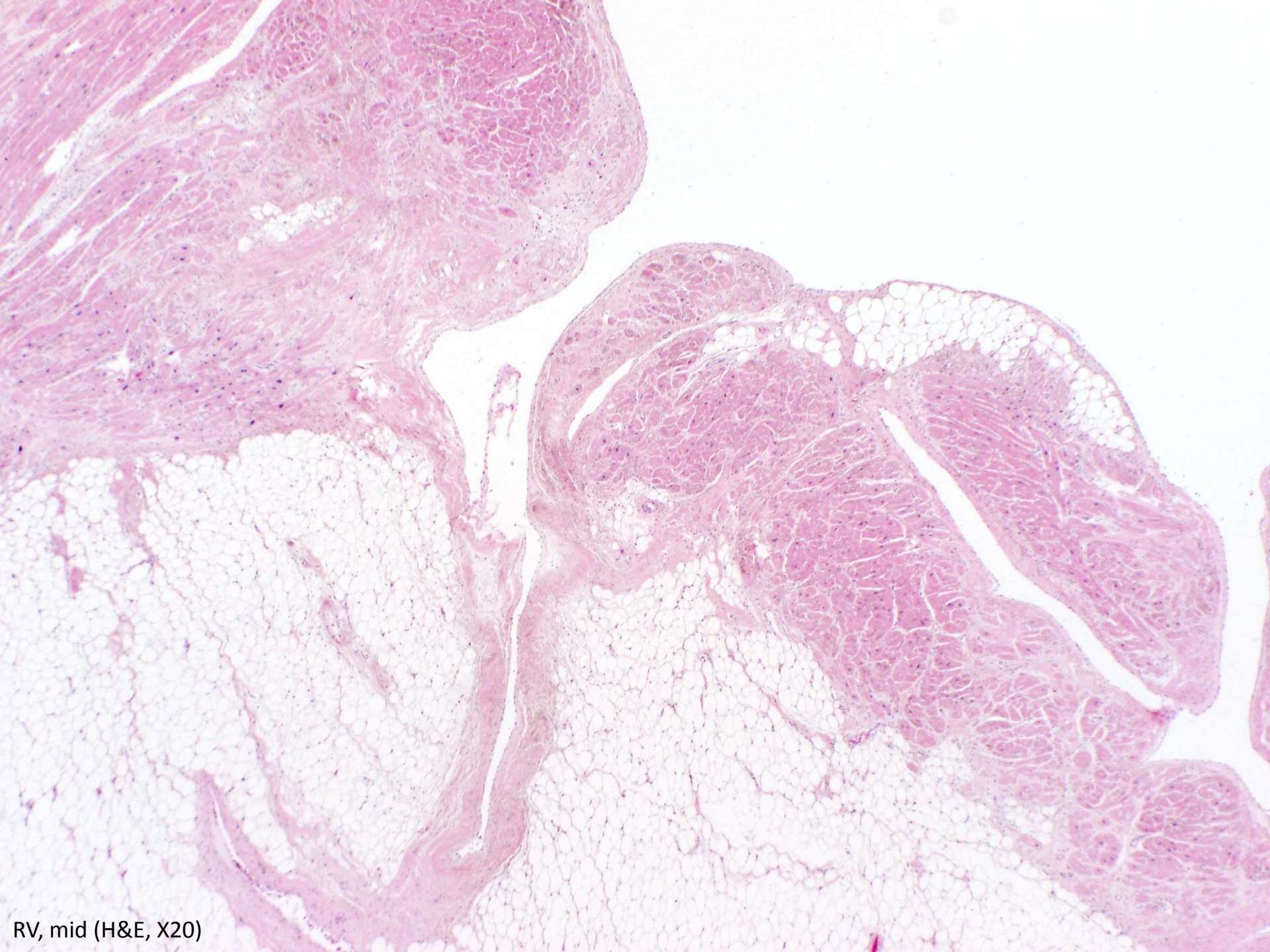
LV-I, mid (H&E, X40)



LV-I, mid (H&E, X100)



LV-I, mid (H&E, X200)



RV, mid (H&E, X20)

?

Differential diagnosis

1. Dilated cardiomyopathy
2. Chronic ischemic heart disease
3. Healing myocarditis
4. Arrhythmogenic cardiomyopathy

Differential diagnosis

1. Dilated cardiomyopathy
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Cardiomyopathies
Incidence in General Population

Type	Per 100,000	Individual	Familial
HCM	200 - 500	1/500	>50%
ACM	20 - 100	1/5000	>50%
DCM*	0.4 - 0.75	1/25,000	30%
RCM	unknown	unknown	<5%
LVNC	unknown	unknown	?

* Familial/sporadic or idiopathic cases only
No ischemic and no secondary causes

Arrhythmogenic Cardiomyopathy
General Features

- Definition

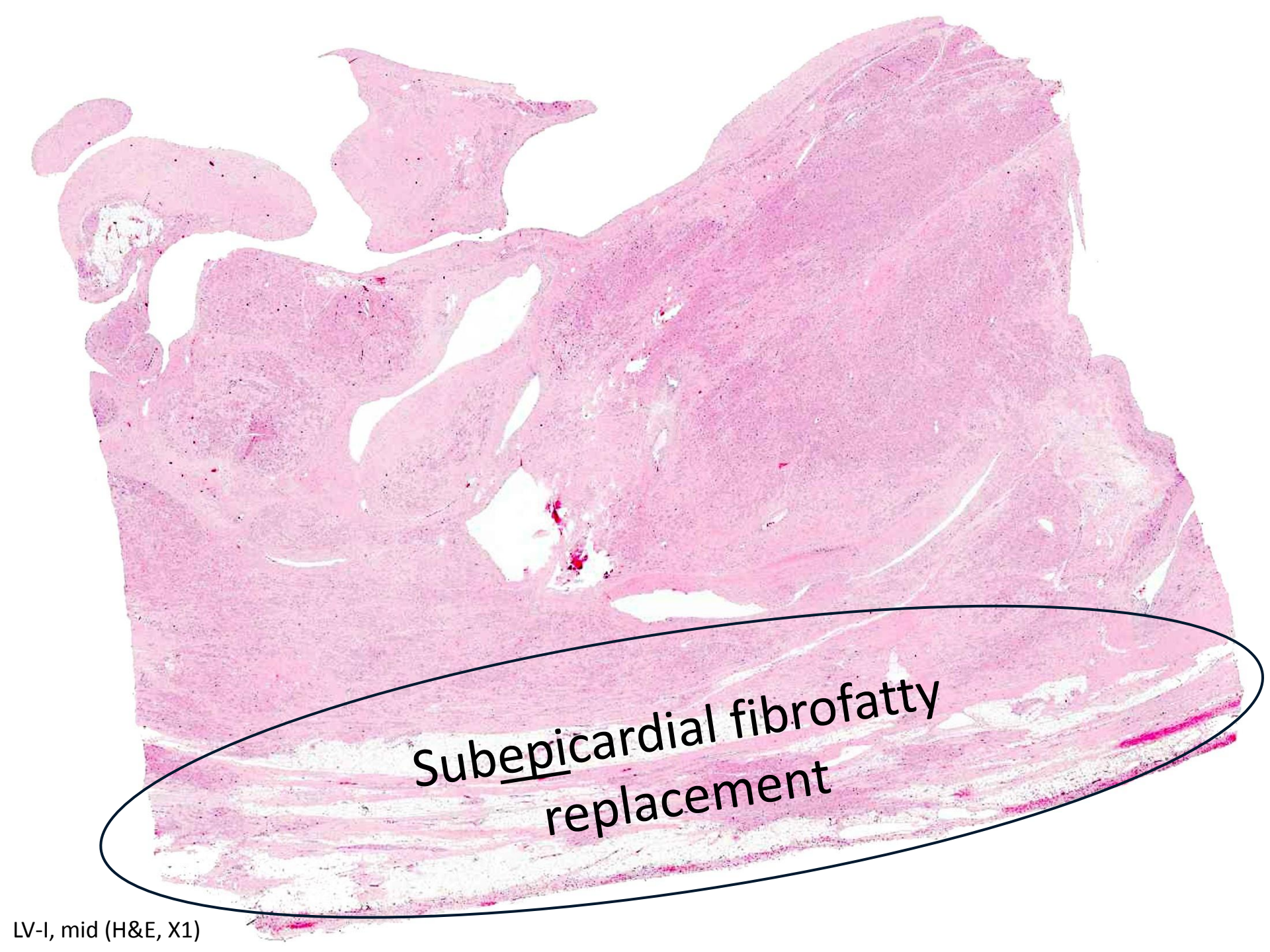
  Systolic dysfunction, with recurrent VT, and focal adiposity, fibrosis, and hypertrophy (RV > biventricular of LV type)
- Demographics

  Age, sex: 15-50 years, M>F

  Mortality: sudden death or heart failure

Arrhythmogenic Cardiomyopathy
Transmission & Gene Mutations

- Mode of inheritance
  Autosomal dominant, with incomplete penetrance and variable expression
- Gene mutations for desmosomal proteins
  Plakophilin-2, desmoplakin, desmocollin-2, desmoglein-2, plakoglobin (Naxos)
- Gene mutations for other proteins
  Ryanodine receptor 2, transforming growth factor β3 (TGF-β3)



LV-I, mid (H&E, X1)