

Enterohemorrhagic *E. coli* O-157 infection

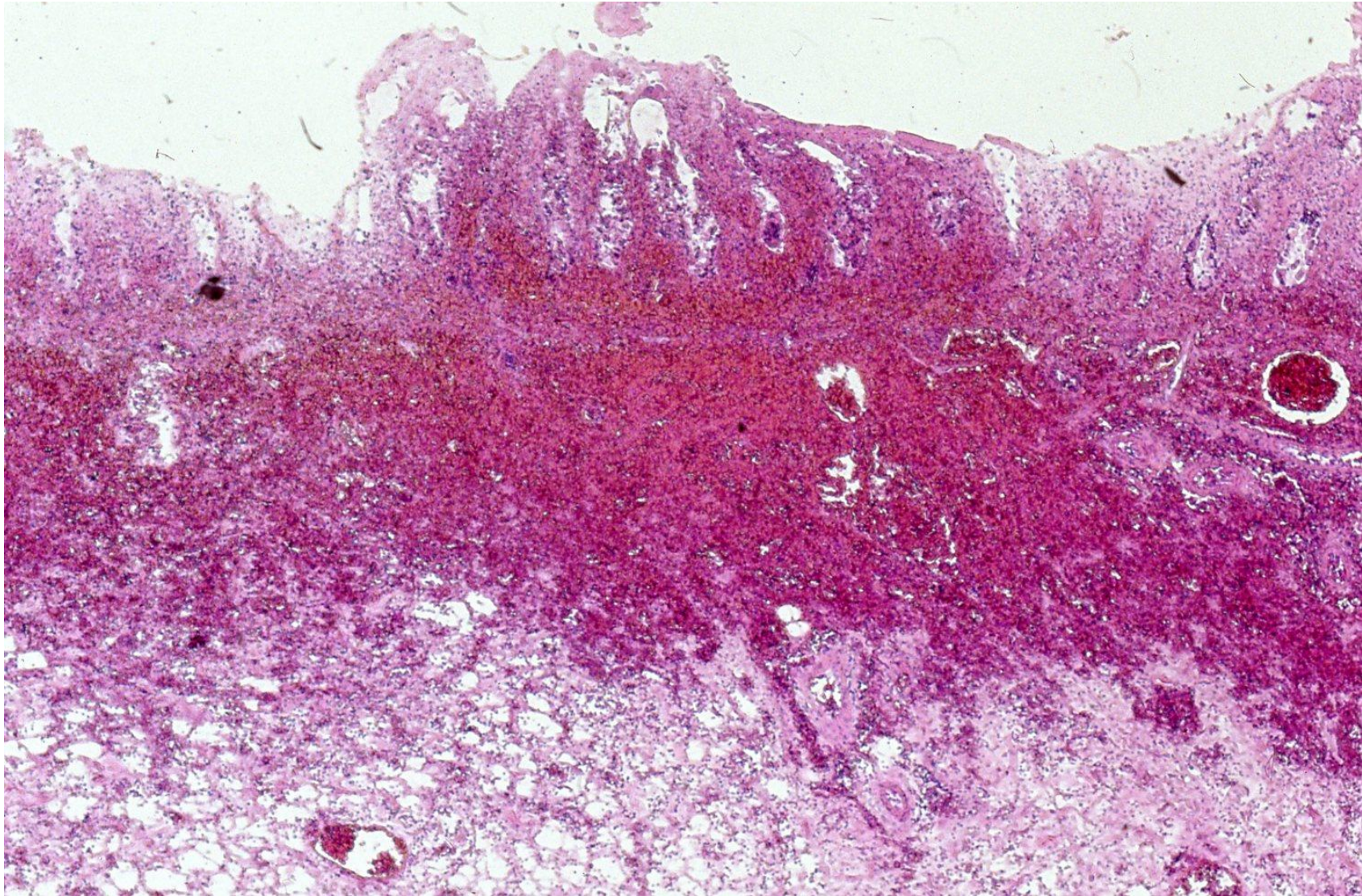
Enterohemorrhagic *E. coli* (EHEC) O-157, H7 infection is a highly contagious colorectal infection caused by *E. coli* strain O-157, H7 producing Shiga toxin. The clinicopathological features are common with bacterial dysentery caused by *Shigella dysenteriae*. EHEC leads to severe stomach cramps, vomiting and severe bloody diarrhea. EHEC is transmitted through contaminated meat products, vegetables, well water and direct contact with carrier animals, particularly during the warm months. The incubation period is 2 to 10 days, with a median of 3 to 4 days. Children are susceptible to EHEC infection. Outbreaks may occur within families, schools or other close-knit communities. Lethal complications include shigatoxin-induced hemolytic uremic syndrome (HUS) and encephalopathy. HUS is common in infants and young children. It should be cautious that antibiotics administration may increase the risk of worsening complications.

Ref.-1: Tsutsumi Y. *E. coli* O-157 infection. Pathology of infectious diseases. 2003.
<https://pathos223.com/en/case/case006.htm>

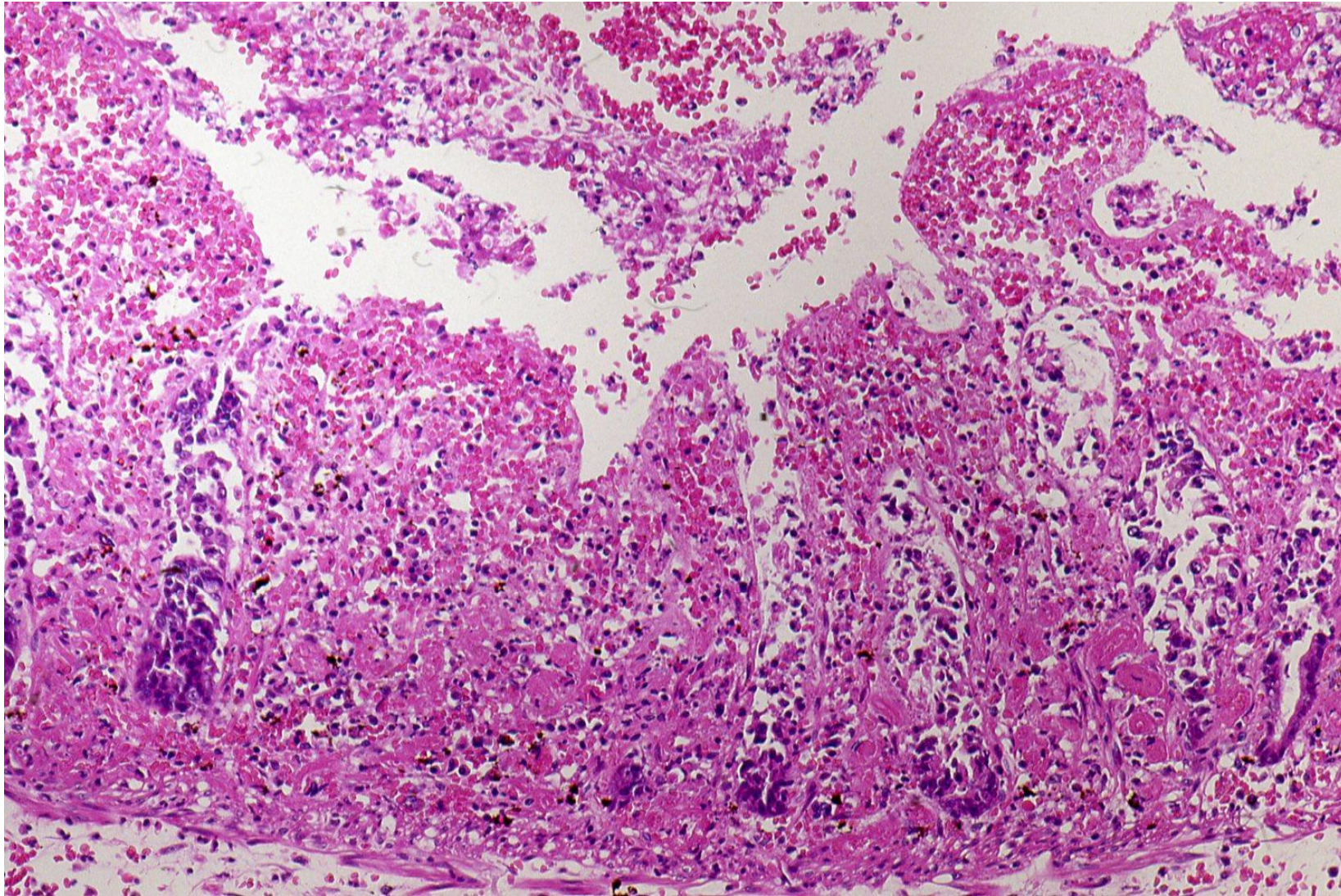
Ref.-2: Nguyen Y, Sperandio V. Enterohemorrhagic *E. coli* (EHEC) pathogenesis. Front Cell Infect Microbiol 2012; 2: 90. doi: 10.3389/fcimb.2012.00090



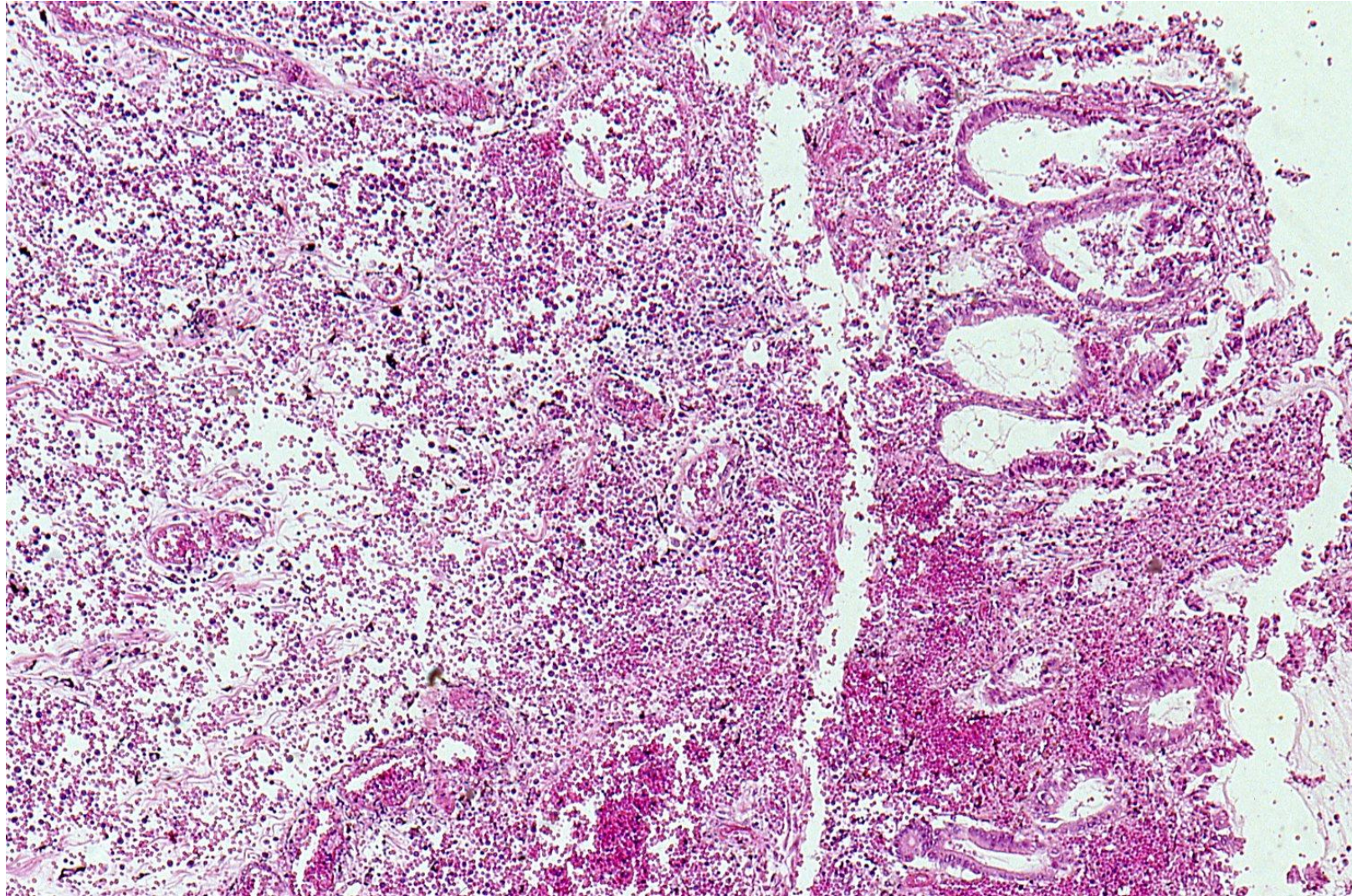
Enterohemorrhagic *E. coli* 0-157 infection in a 4-year-old girl. Gross appearance of the colon at autopsy. Massive mucosal hemorrhage is evident, and the features are indistinguishable from bacterial dysentery.



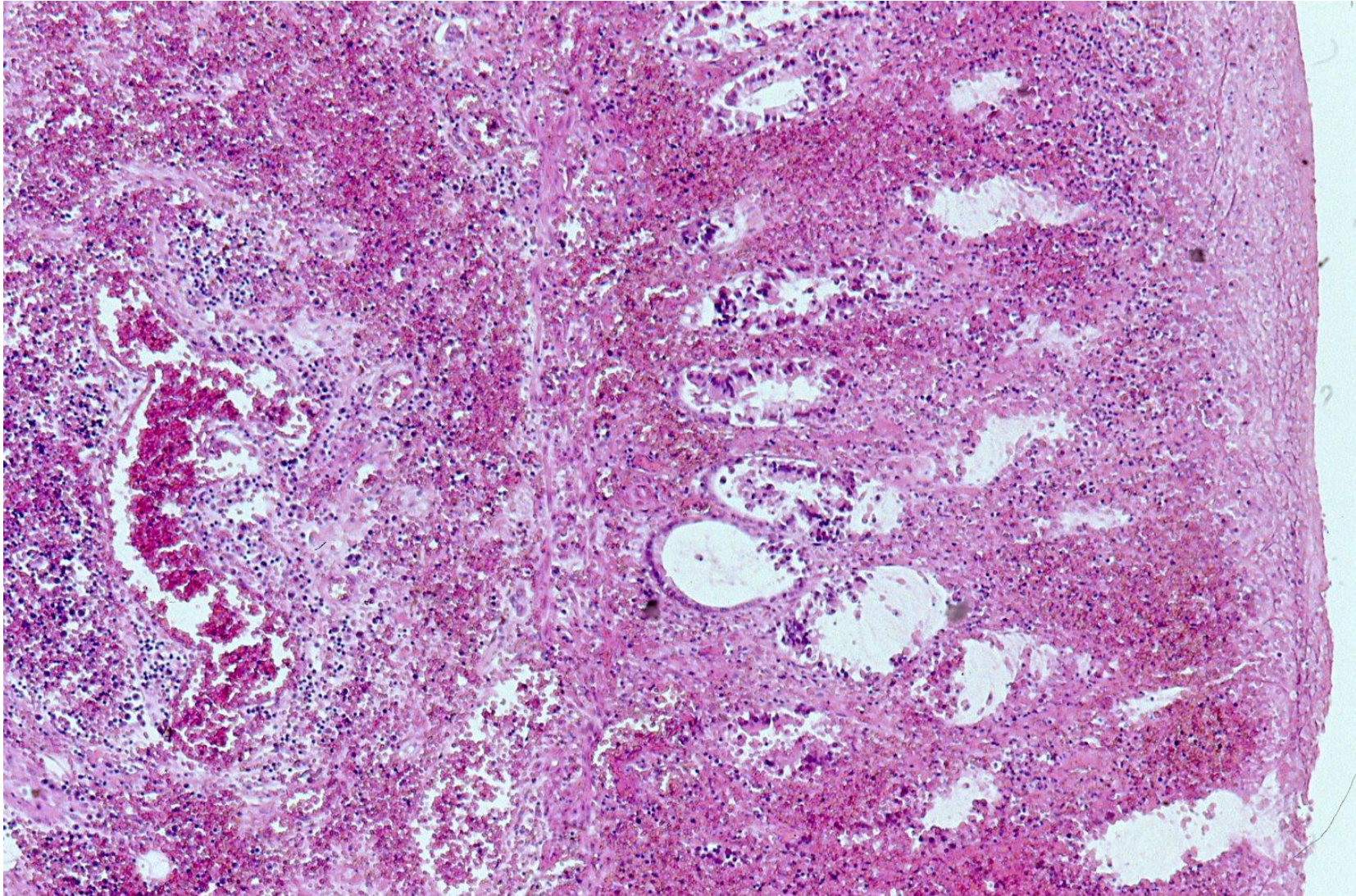
Enterohemorrhagic *E. coli* 0-157 infection in a 4-year-old girl. Massive hemorrhage is seen in the mucosa and submucosa. The colonic crypts are destroyed. H&E-1



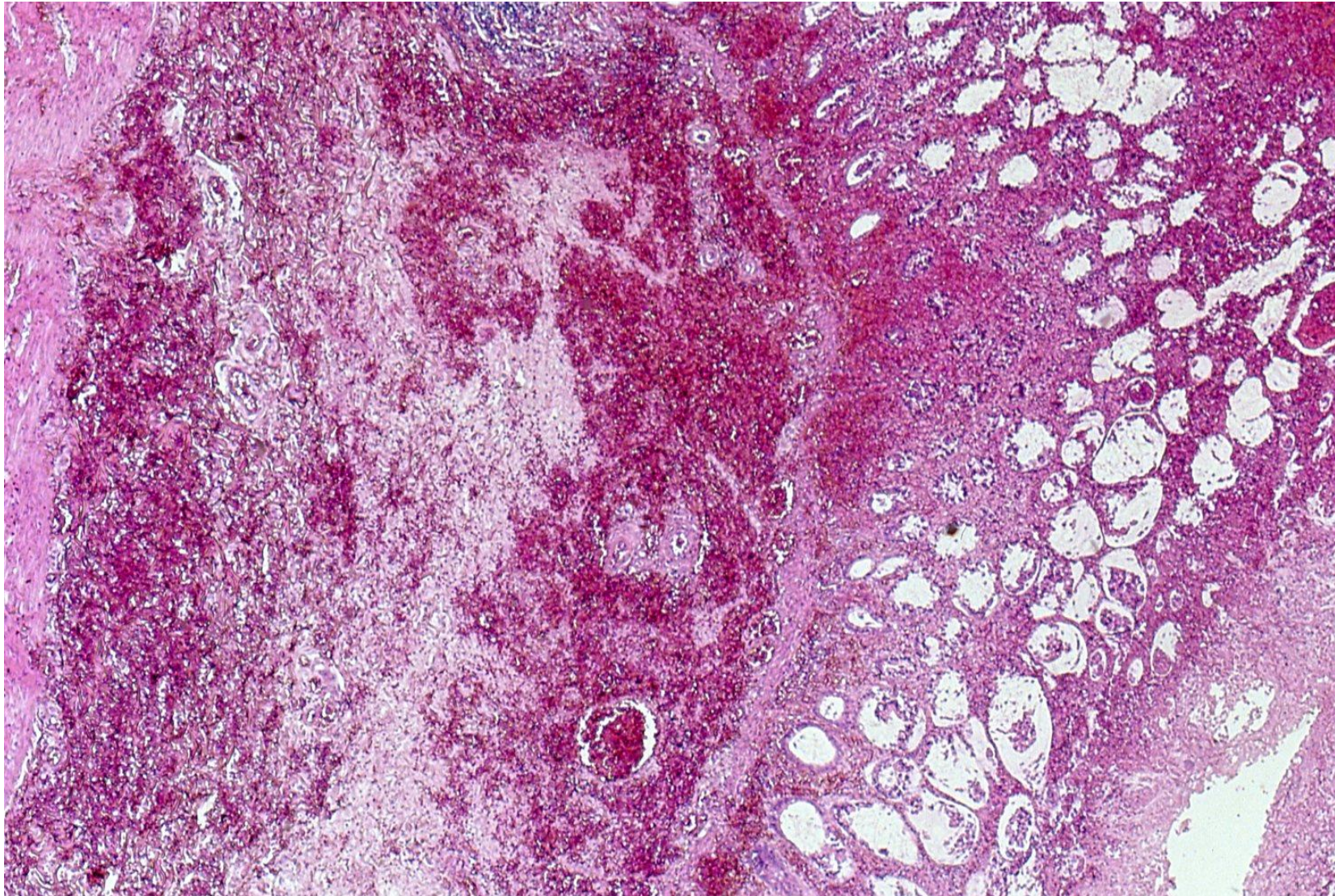
Enterohemorrhagic *E. coli* O-157 infection in a 4-year-old girl. Massive hemorrhage is seen in the mucosa. The colonic crypts are destroyed, and mucosal debris are attached onto the mucosa. H&E-2



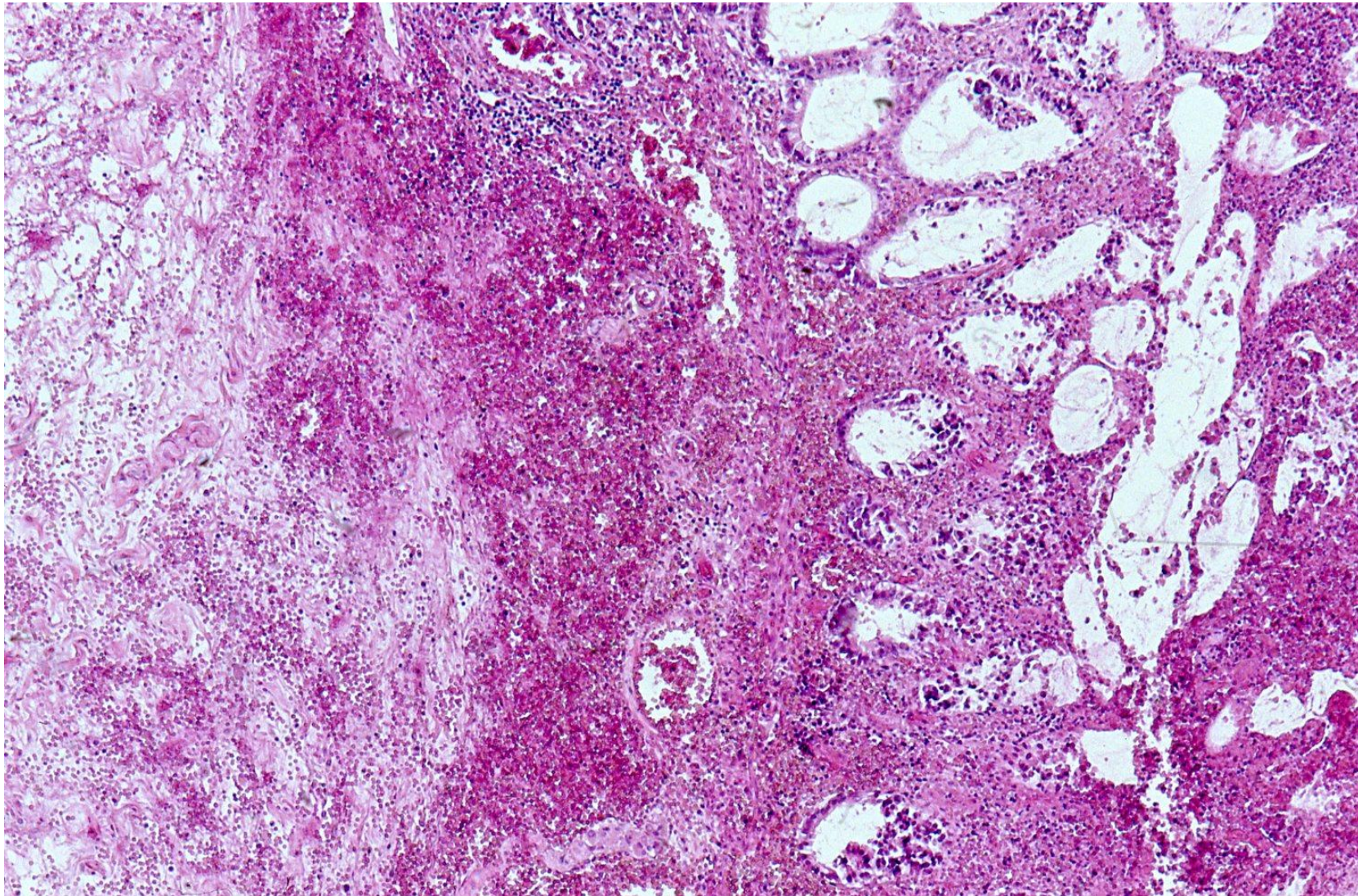
Enterohemorrhagic *E. coli* 0-157 infection in a 4-year-old girl. Massive hemorrhage is seen in the mucosa and submucosa. The colonic crypts are destroyed. H&E-3



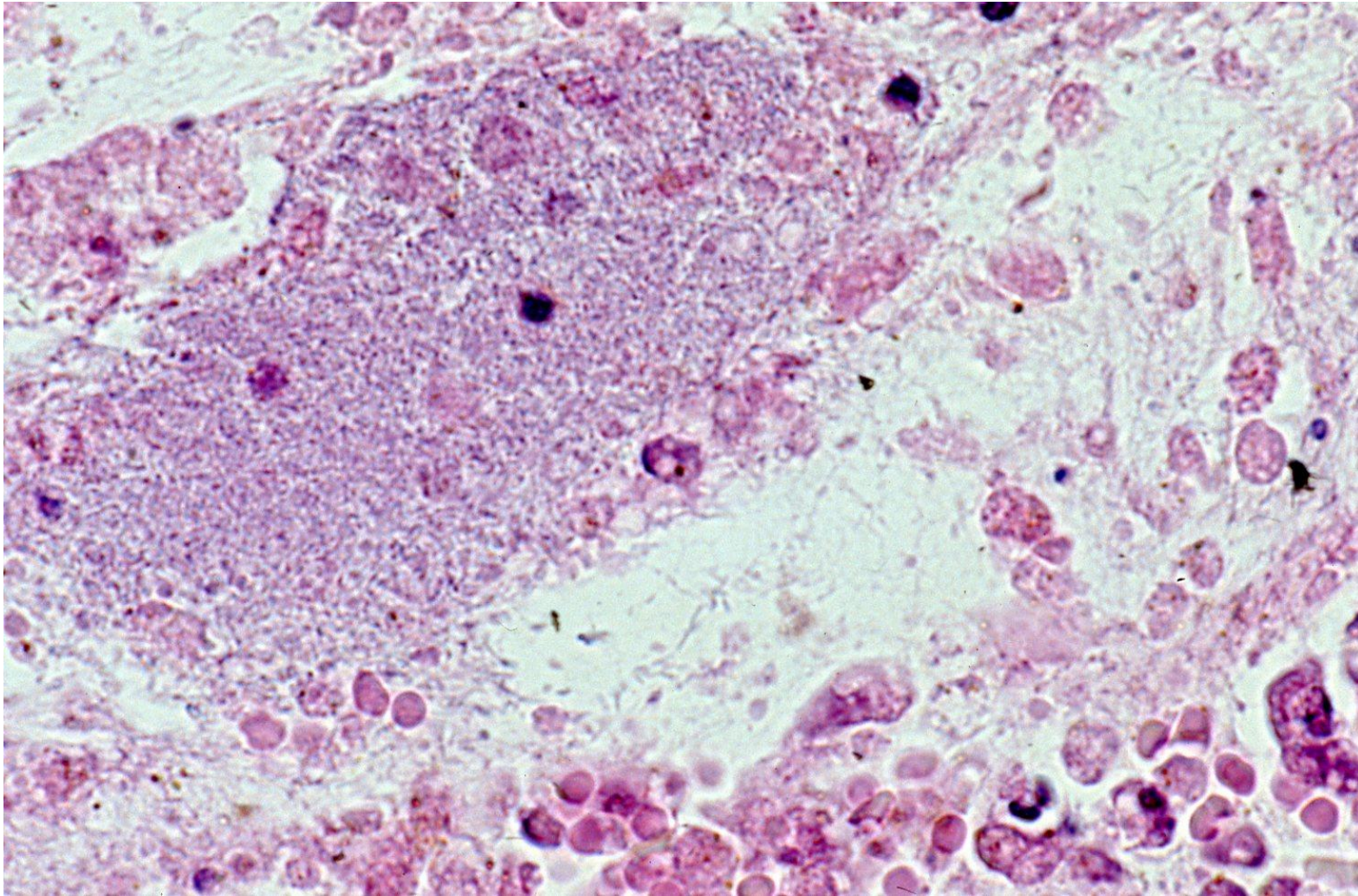
Enterohemorrhagic *E. coli* 0-157 infection in a 4-year-old girl. Massive hemorrhage is seen in the mucosa and submucosa. The colonic crypts are destroyed. H&E-4



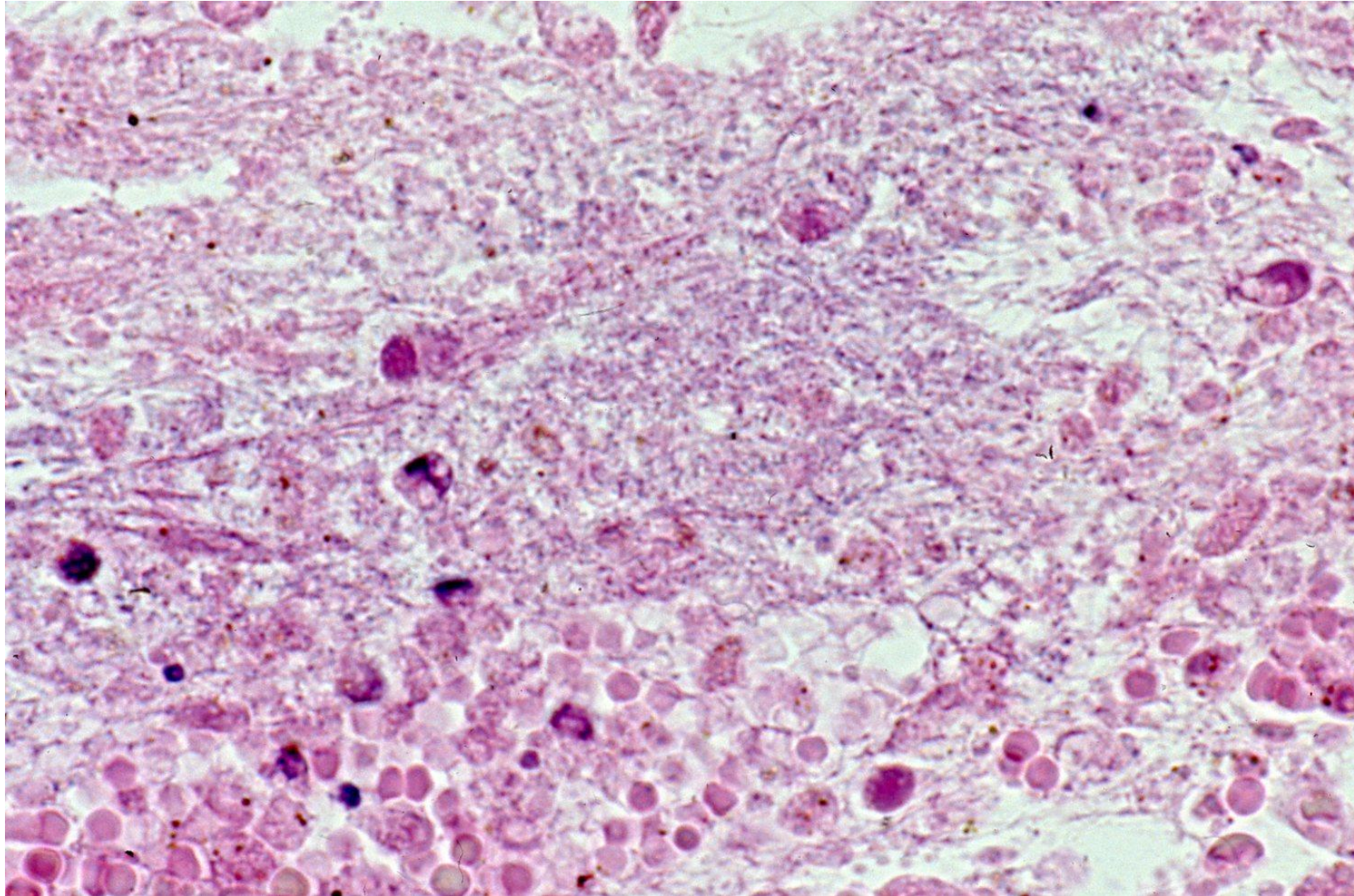
Enterohemorrhagic *E. coli* 0-157 infection in a 4-year-old girl. Massive hemorrhage is seen in the mucosa and submucosa. The colonic crypts are destroyed. H&E-5



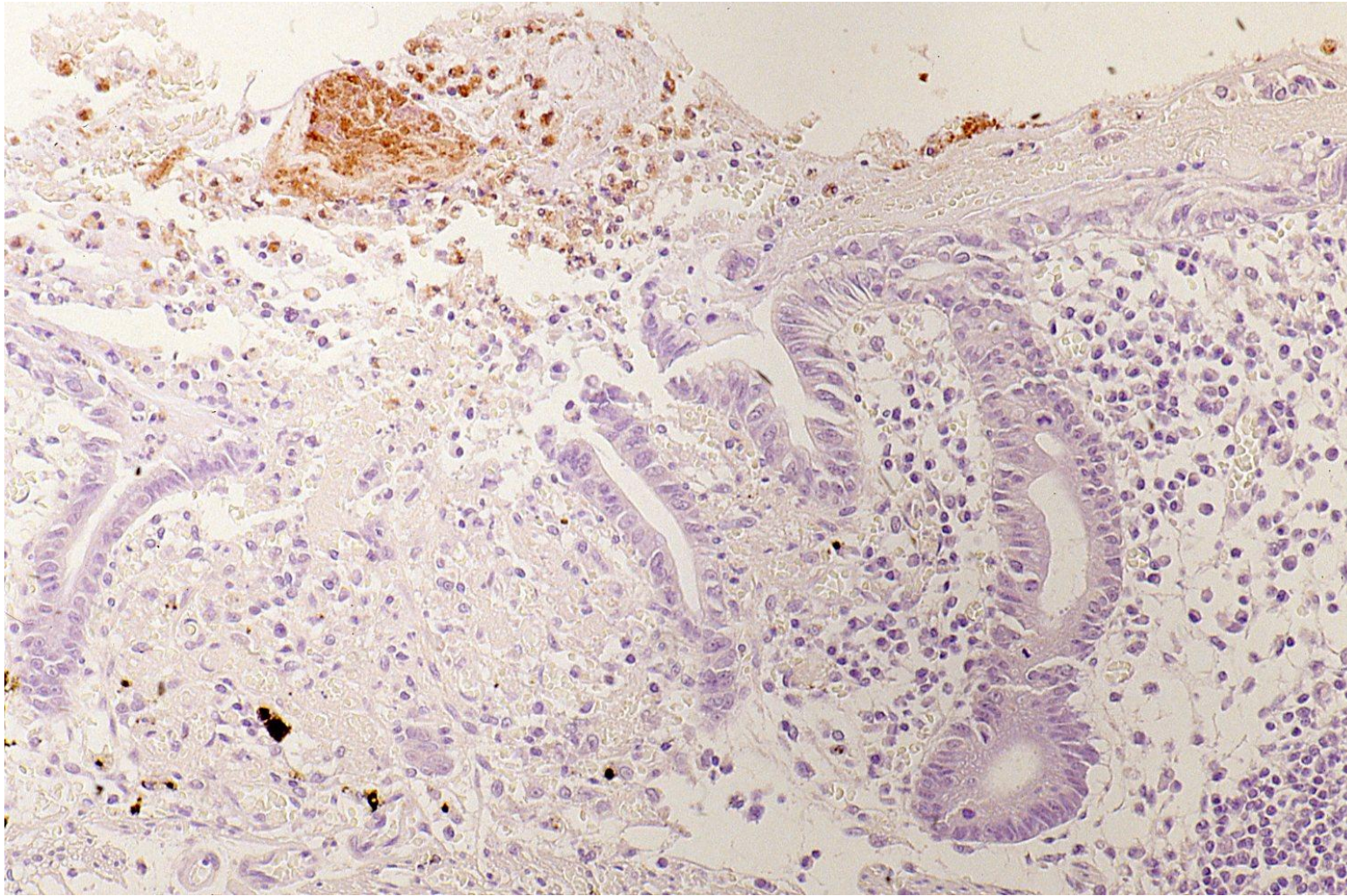
Enterohemorrhagic *E. coli* O-157 infection in a 4-year-old girl. Massive hemorrhage is seen in the mucosa and submucosa. The colonic crypts are destroyed. H&E-6



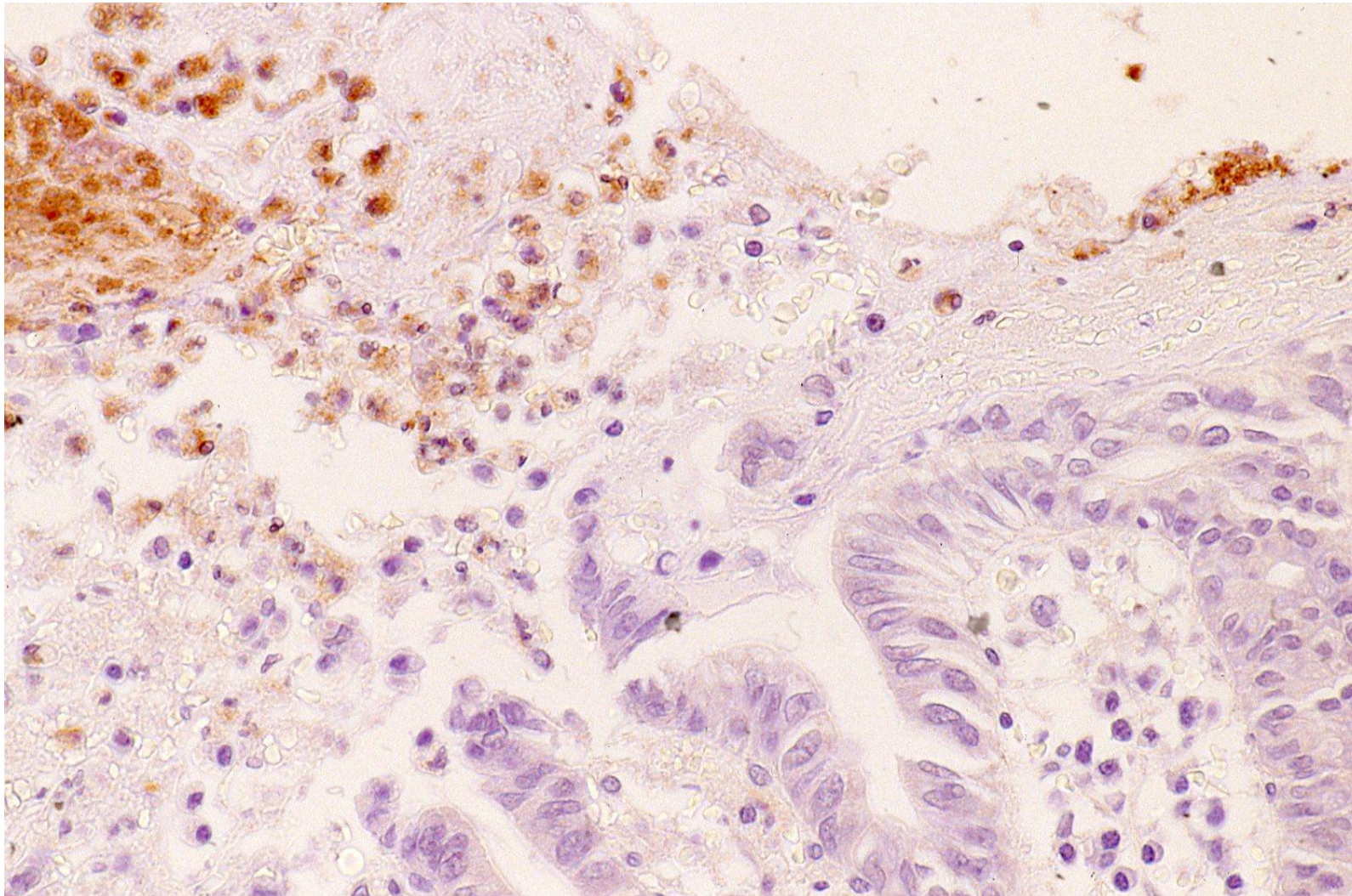
Enterohemorrhagic *E. coli* O-157 infection in a 4-year-old girl.
Gram-negative rods are clustered on the mucosa (among the mucosal debris). H&E-7



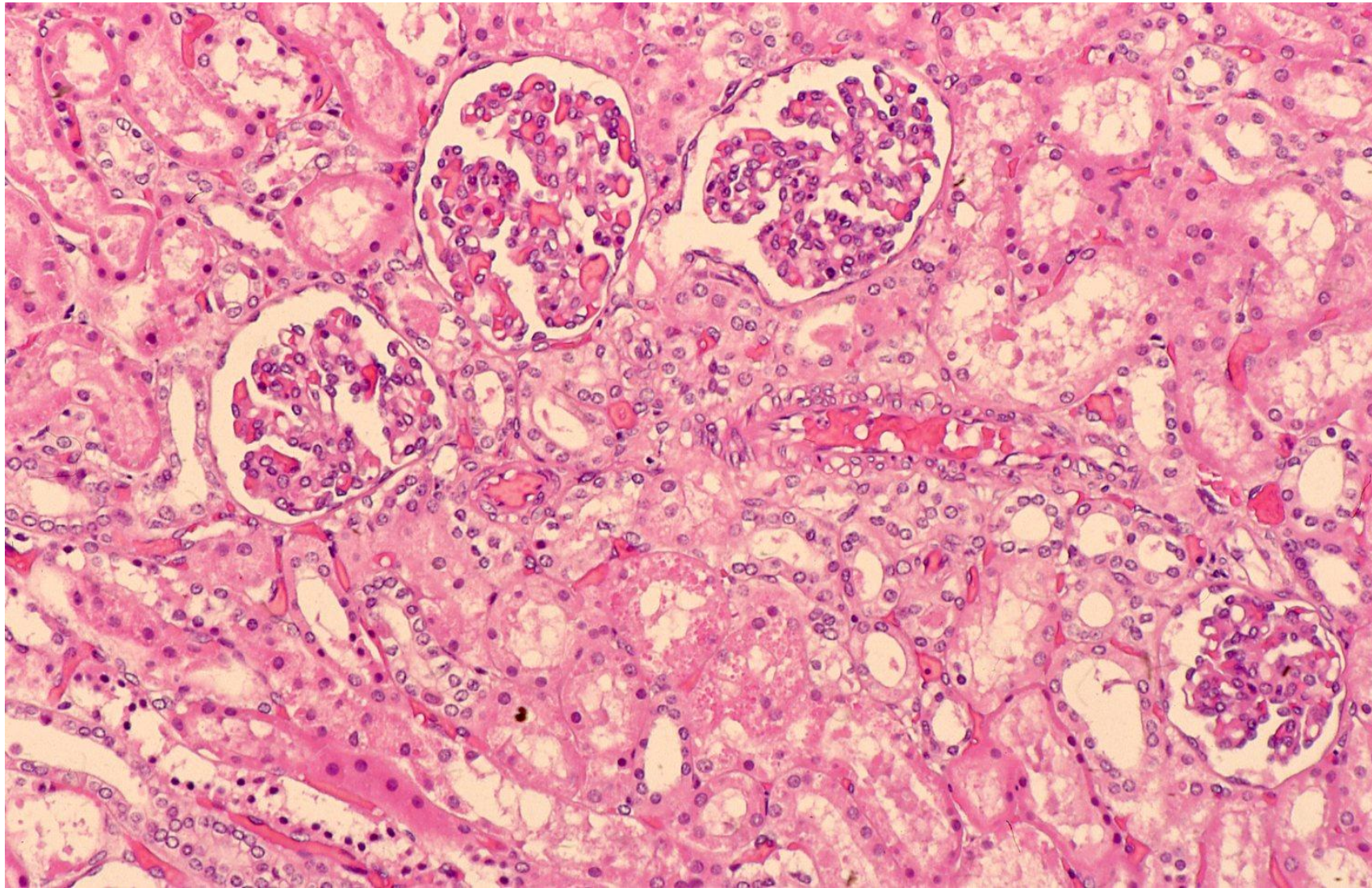
Enterohemorrhagic *E. coli* 0-157 infection in a 4-year-old girl.
Gram-negative rods are clustered on the mucosa (among the mucosal
debris). H&E-8



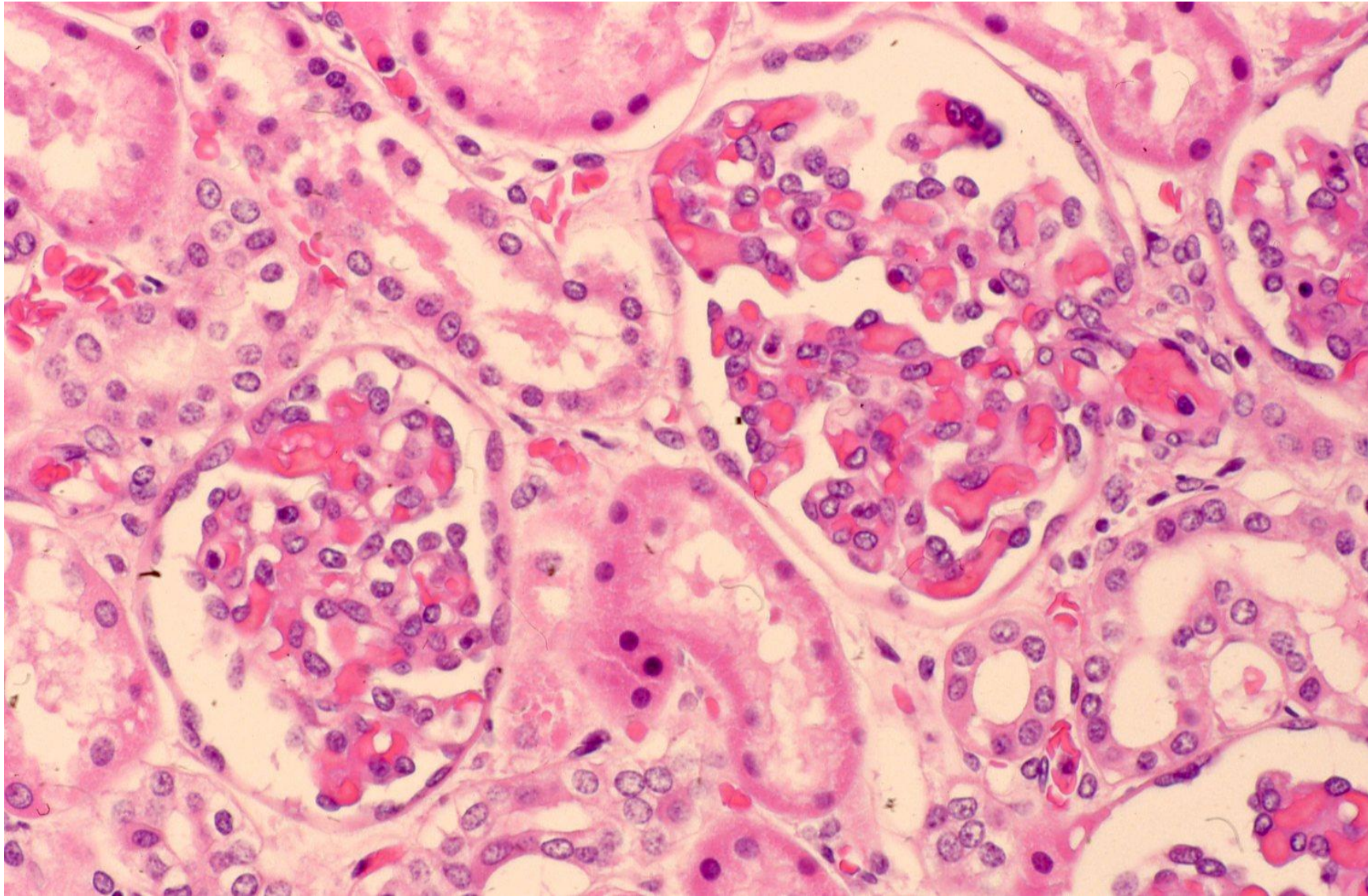
Enterohemorrhagic *E. coli* 0-157 infection in a 4-year-old girl. *E. coli* antigen is demonstrated in the mucosal debris covering the eroded mucosa. Immunostaining for *E. coli* Ag-1



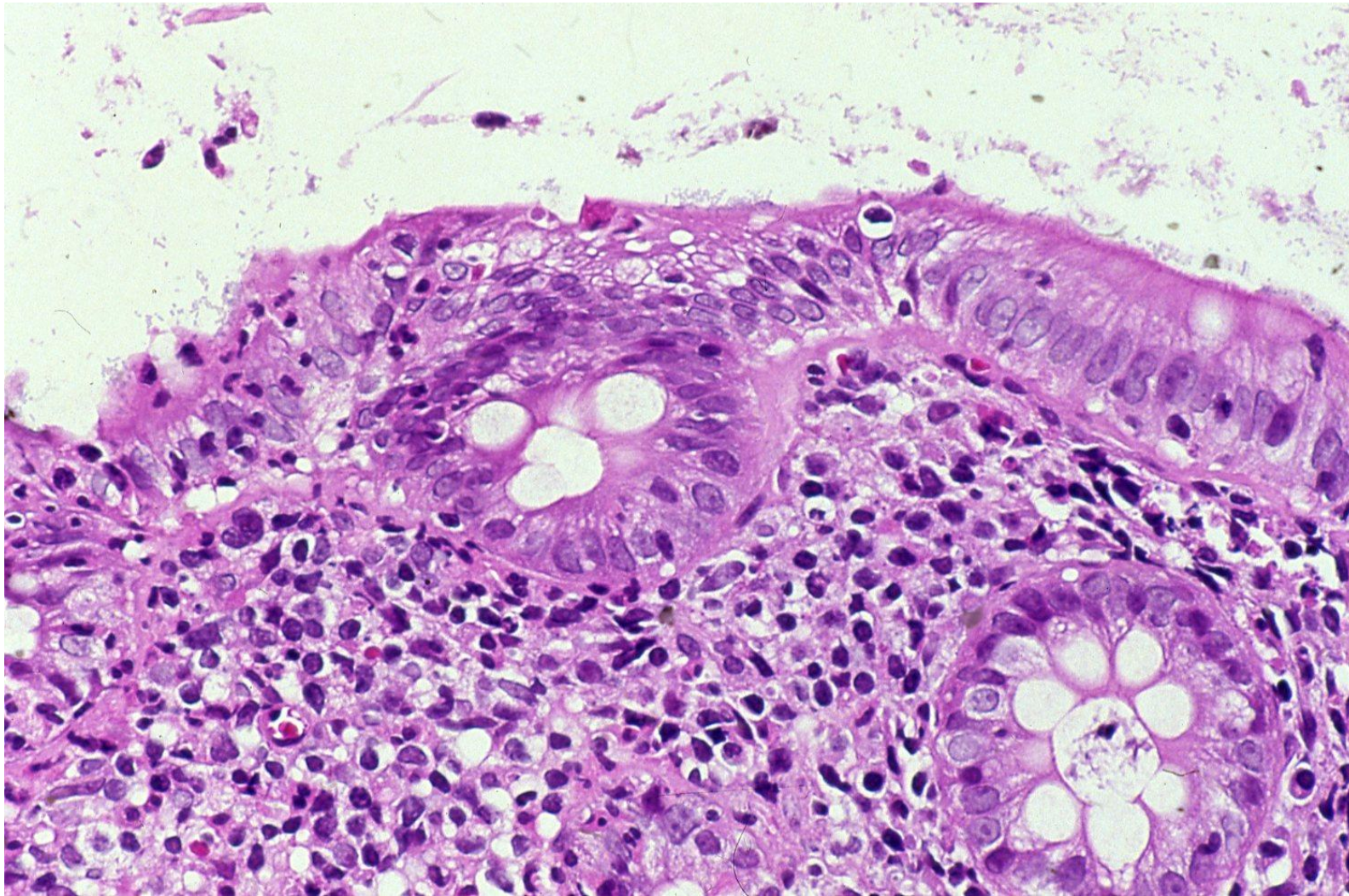
Enterohemorrhagic *E. coli* O-157 infection in a 4-year-old girl. *E. coli* antigen is demonstrated in the mucosal debris covering the eroded mucosa. Immunostaining for *E. coli* Ag-2



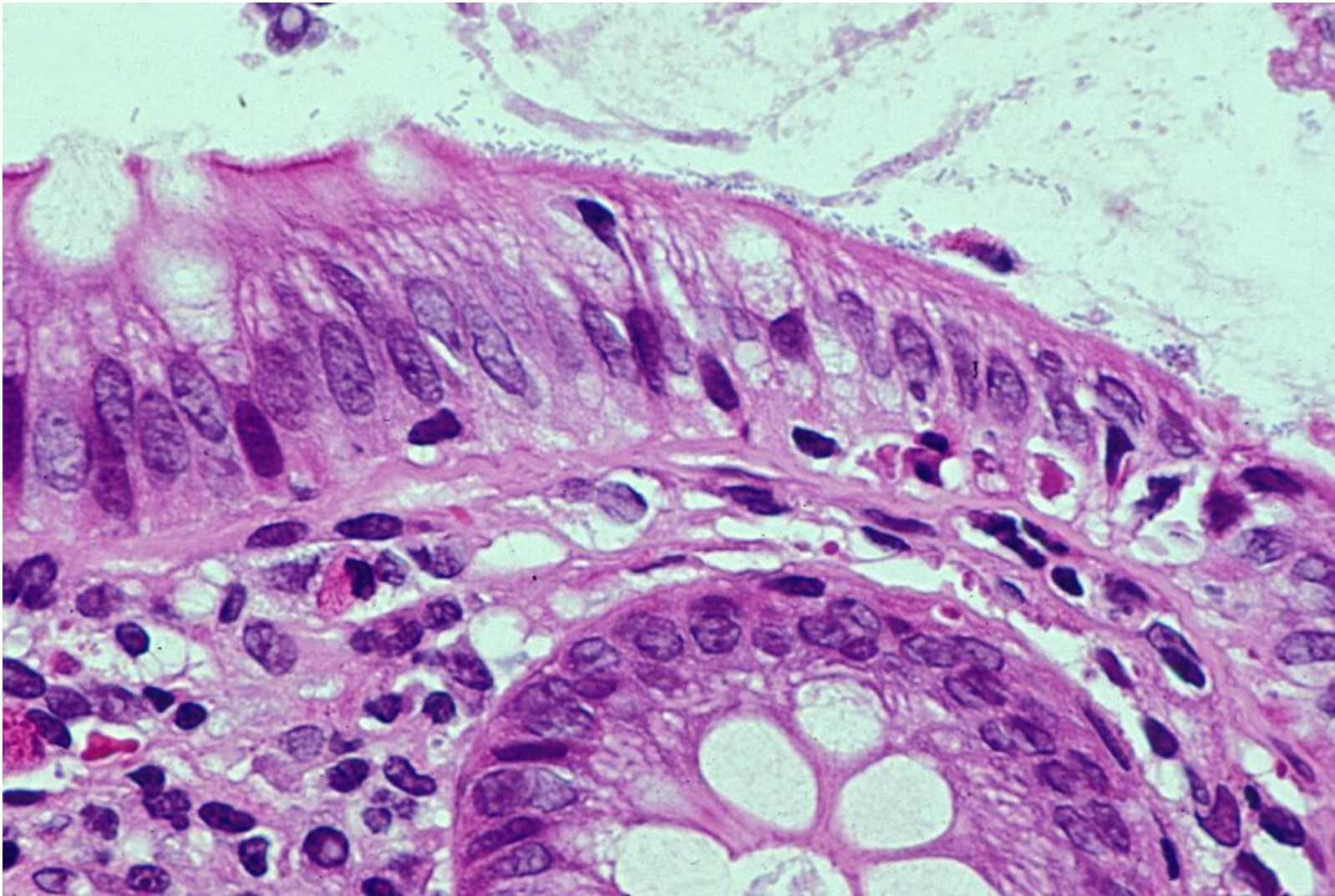
Enterohemorrhagic *E. coli* 0-157 infection in a 4-year-old girl. The kidney reveals hemolytic uremic syndrome (HUS) with microthrombi in glomerular capillaries. The proximal renal tubules show cytolysis. H&E-9



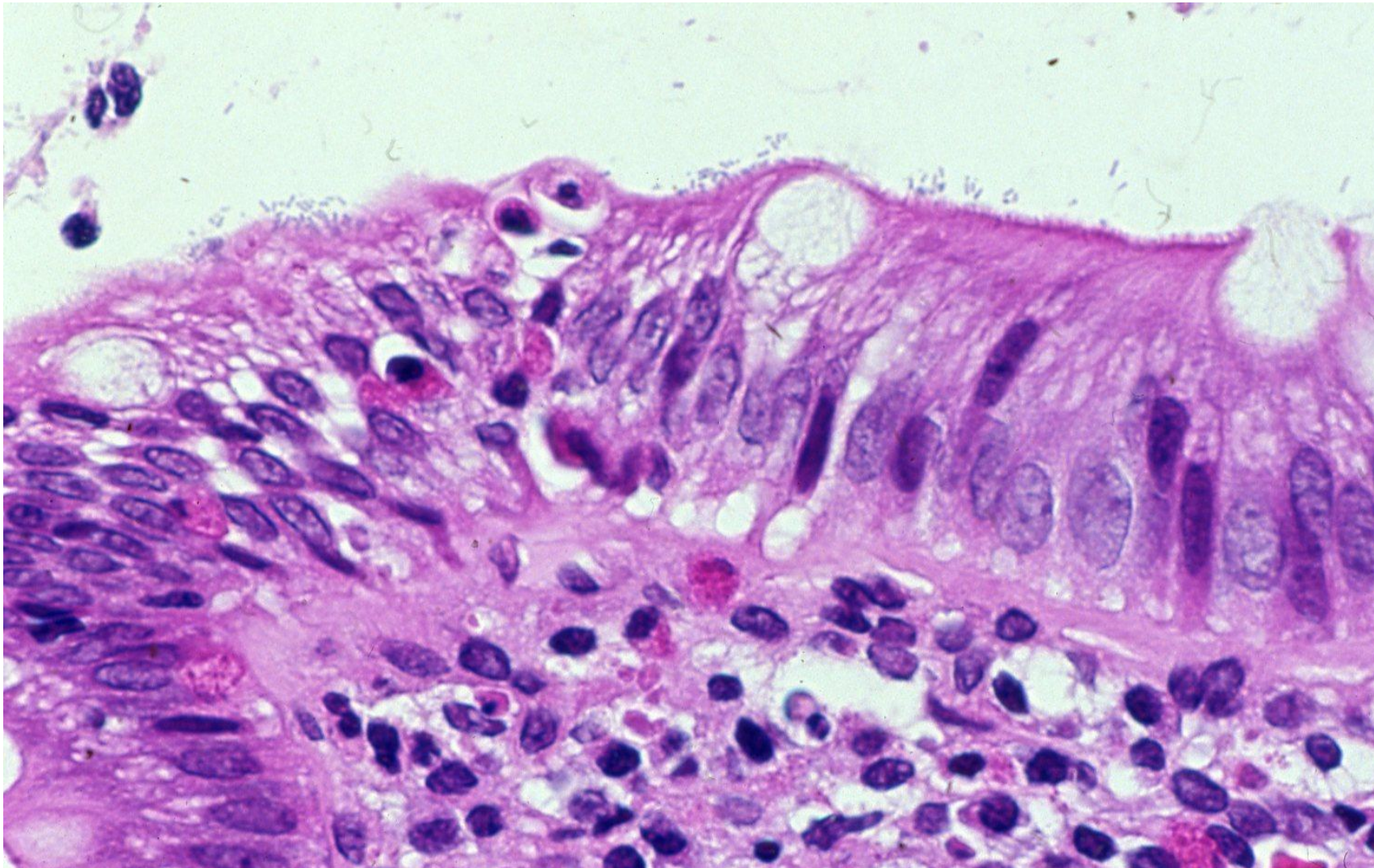
Enterohemorrhagic *E. coli* 0-157 infection in a 4-year-old girl. The kidney reveals hemolytic uremic syndrome (HUS) with microthrombi in glomerular capillaries. The proximal renal tubules show cytolysis. H&E-10



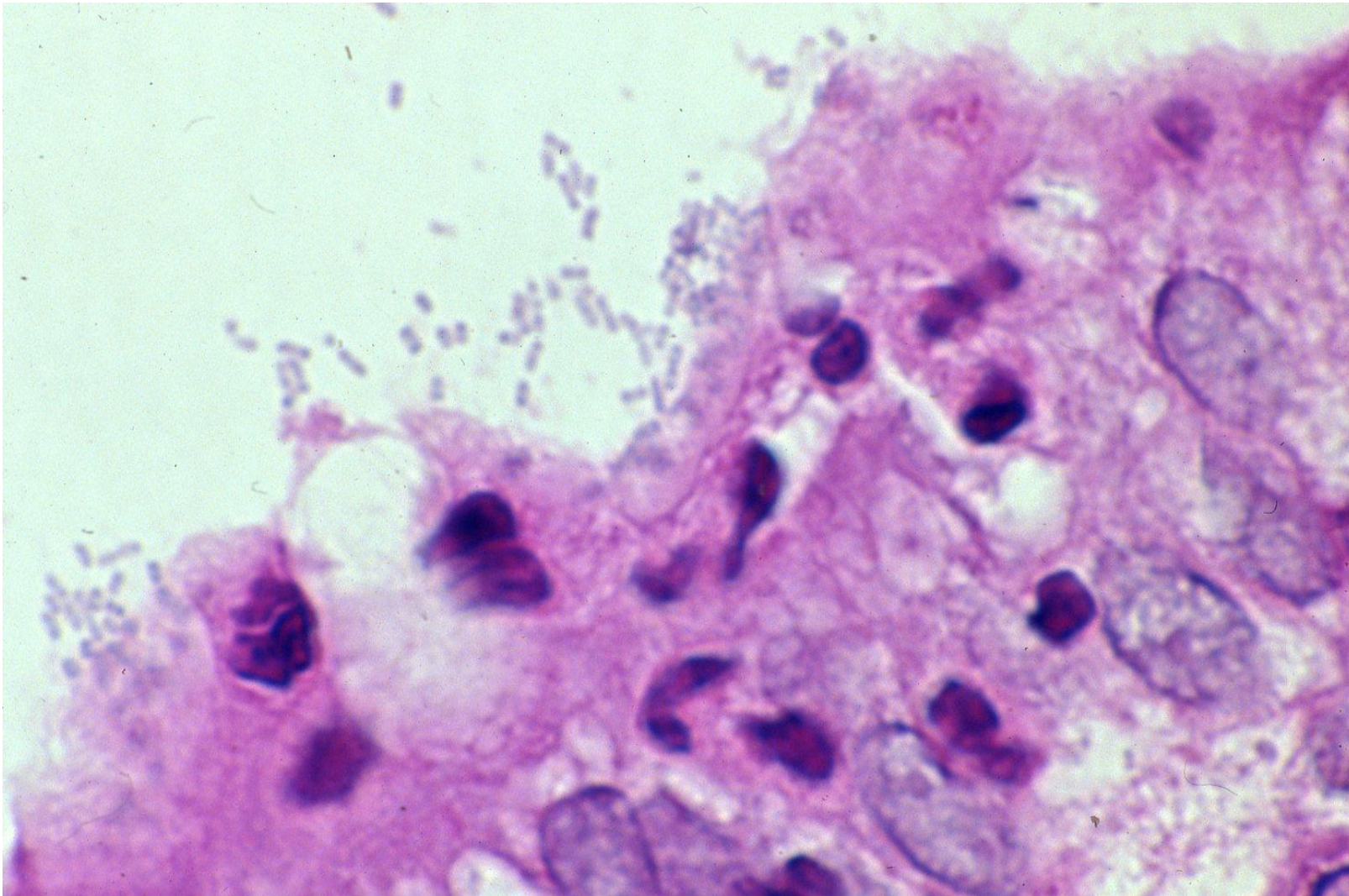
The colon biopsy from a 20-year-old female patient, complaining severe watery diarrhea. The clinician suspected inflammatory bowel disease. In addition to chronic active inflammation in the lamina propria mucosae, enteroadhesive *E. coli* is observed on the columnar cells covering the colonic mucosa. Microbial culture was positive for *E. coli* O-157, H7. The diagnosis of pathogenic *E. coli* infection was made histopathologically. H&E-a



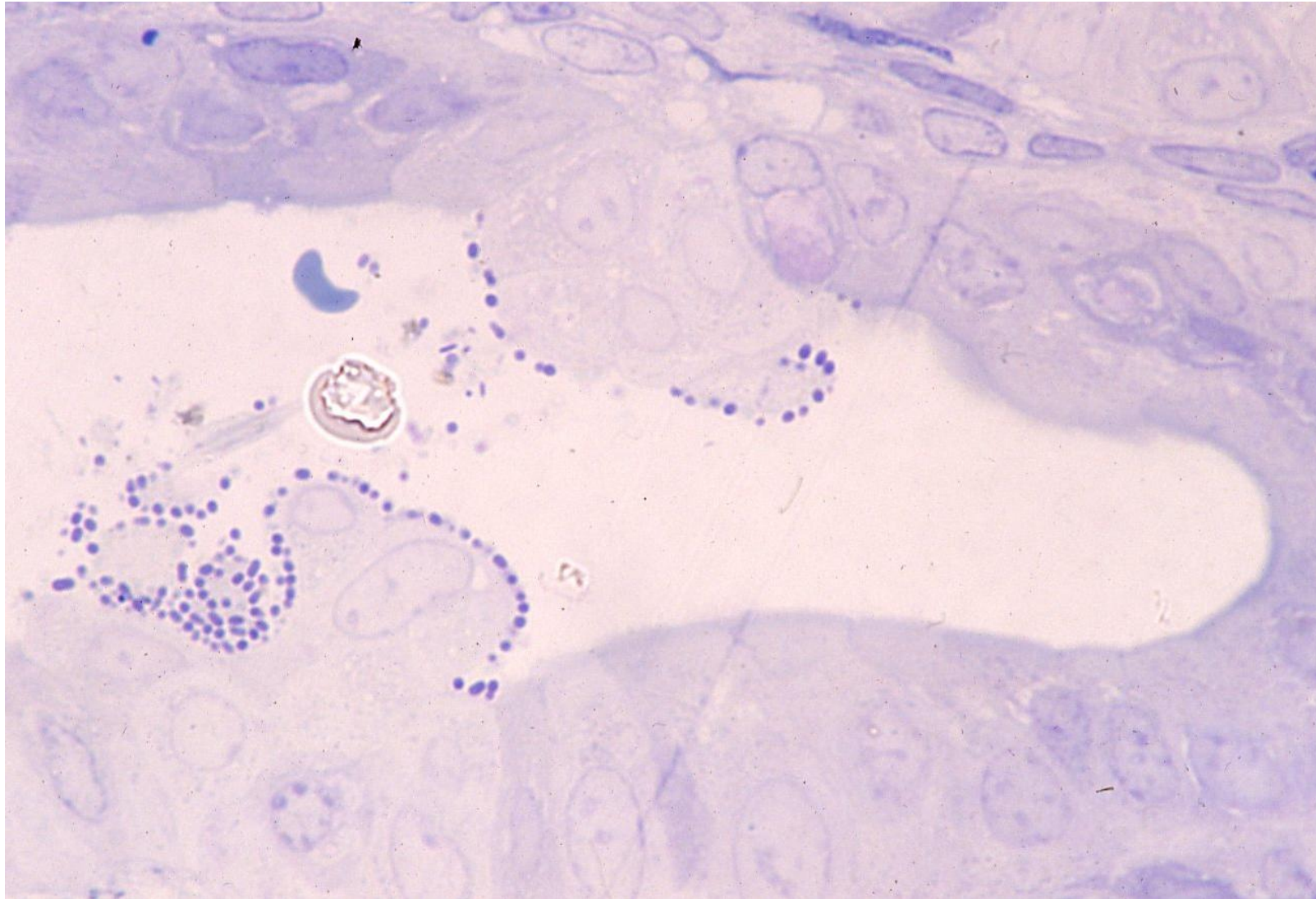
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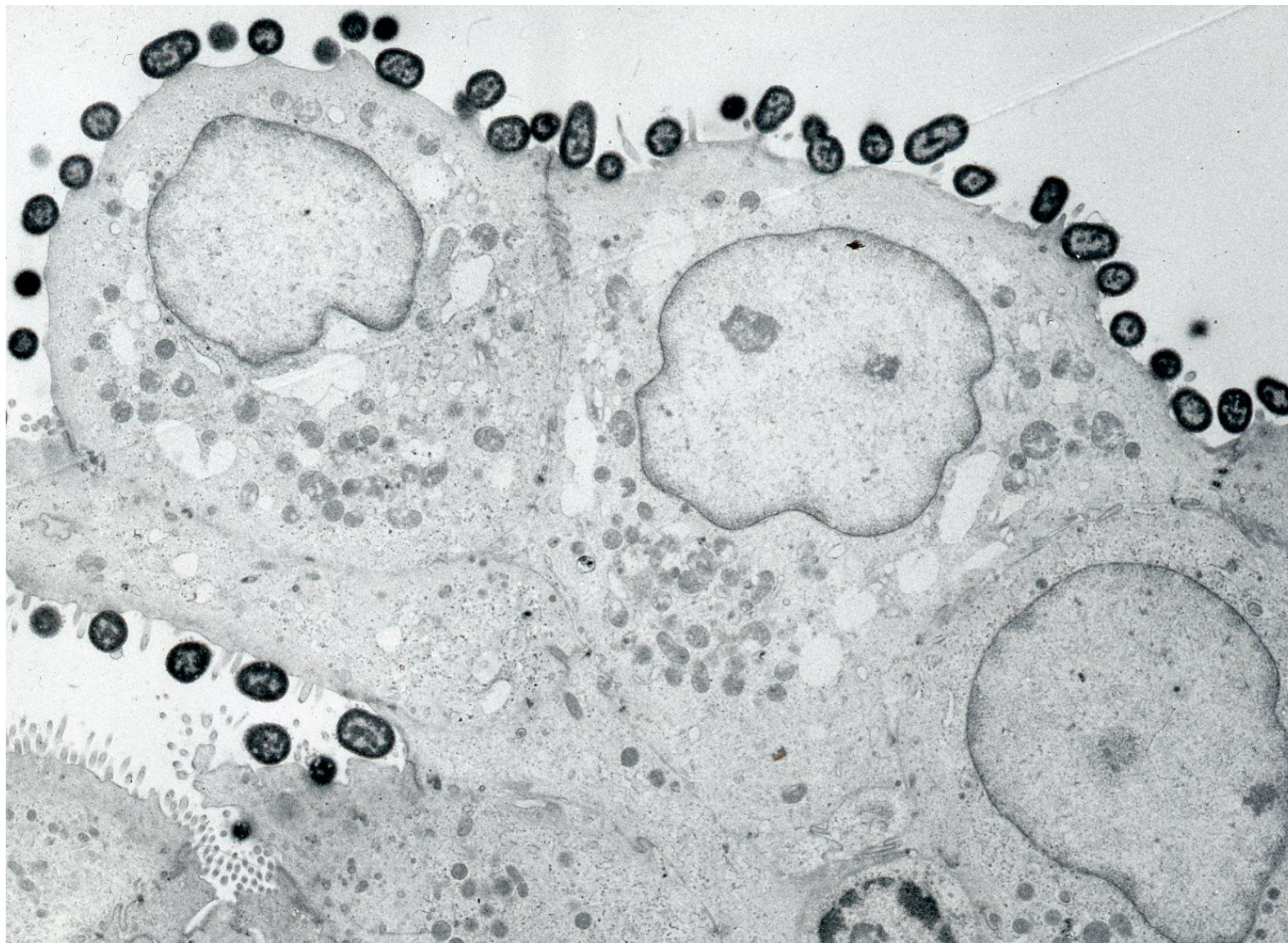
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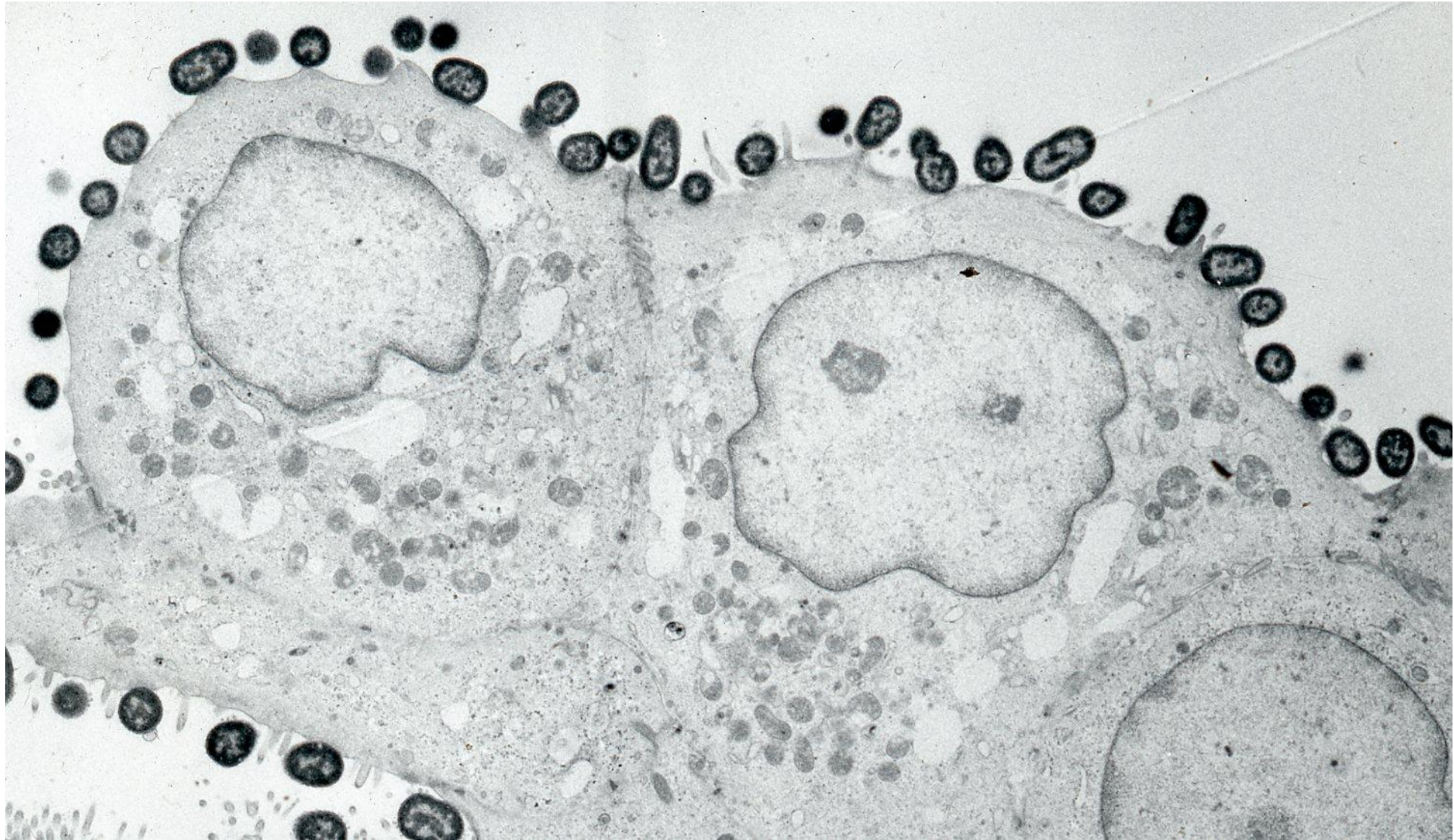
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Experimental infection of enteroadhesive *E. coli* O-5 in the rabbit.
Coccobacilli are attached onto the colonic mucosal surface.
Toluidine blue staining for thick section for EM



Experimental infection of enteroadhesive *E. coli* O-5 in the rabbit. Ultrastructurally, electron-dense coccobacilli are densely attached onto the colonic mucosal surface. EM-1



Experimental infection of enteroadhesive *E. coli* O-5 in the rabbit. Ultrastructurally, electron-dense coccobacilli are densely attached onto the colonic mucosal surface. EM-2