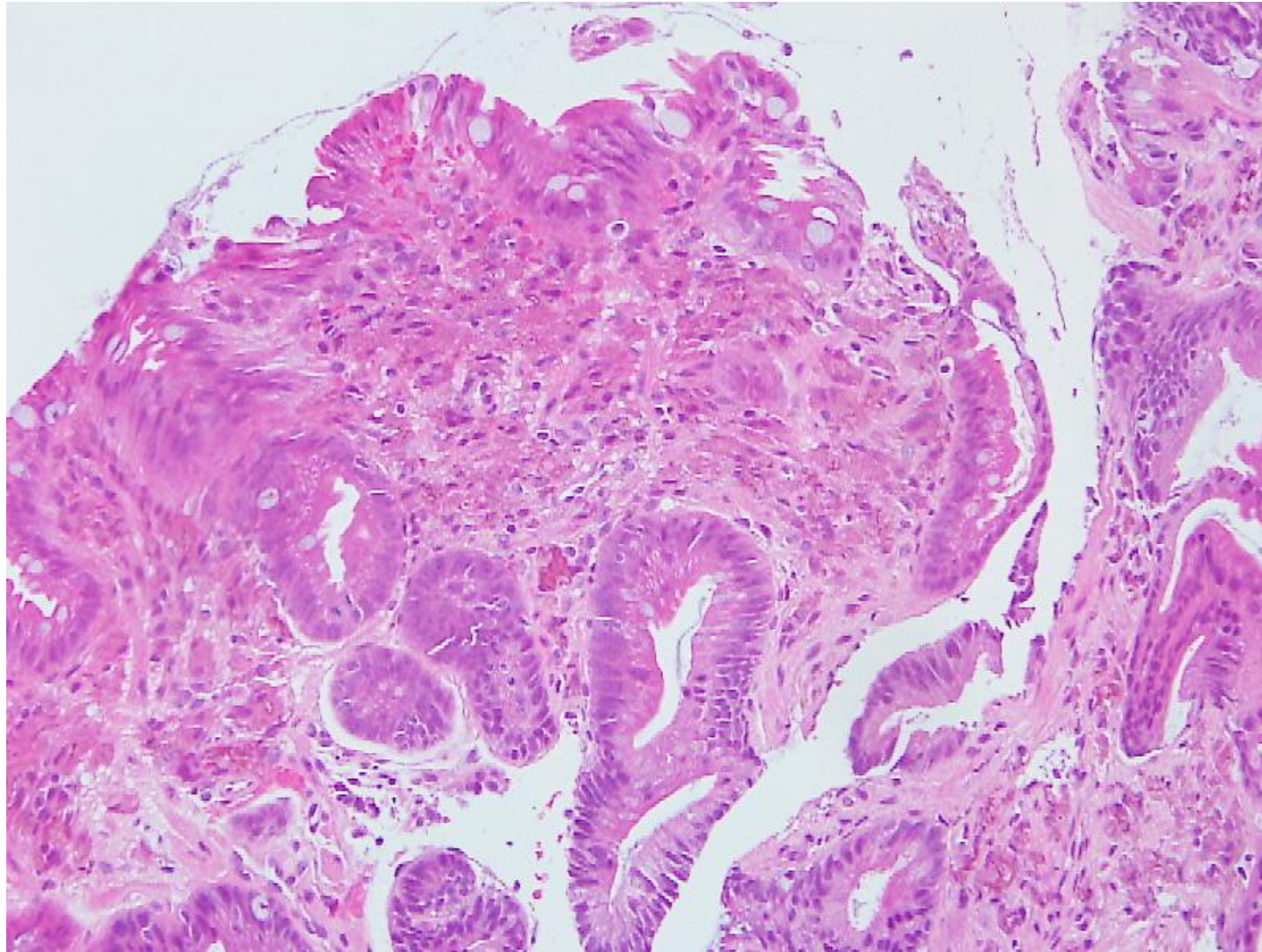


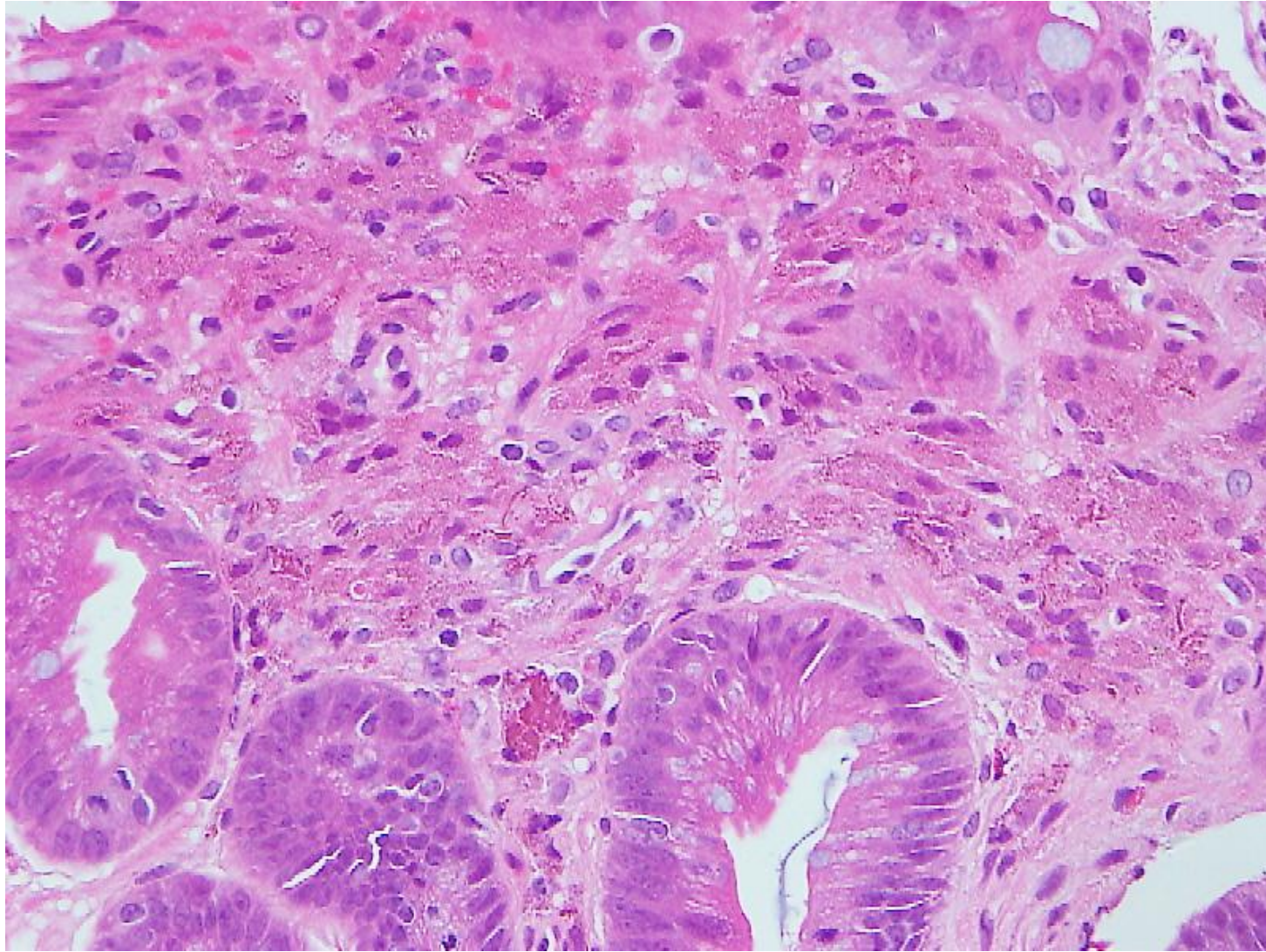
Lanthanum carbonate deposition in the gastric mucosa

Lanthanum carbonate is an oral phosphate binder used for treating hyperphosphatemia in patients with end stage renal disease on hemodialysis. The medication can deposit throughout the gastrointestinal tract mucosa, most commonly in the stomach but also in the small intestine and colon. The deposition may be detected years after cessation of therapy. Microscopically, it appears as intramucosal aggregates of brown purple amorphous, crystalline or birefringent material, engulfed by epithelioid histiocytes. PAS reaction is positive, while Berlin blue, Fontana-Masson and von Kossa stains give negative results. The overlying gastric mucosa is intact.

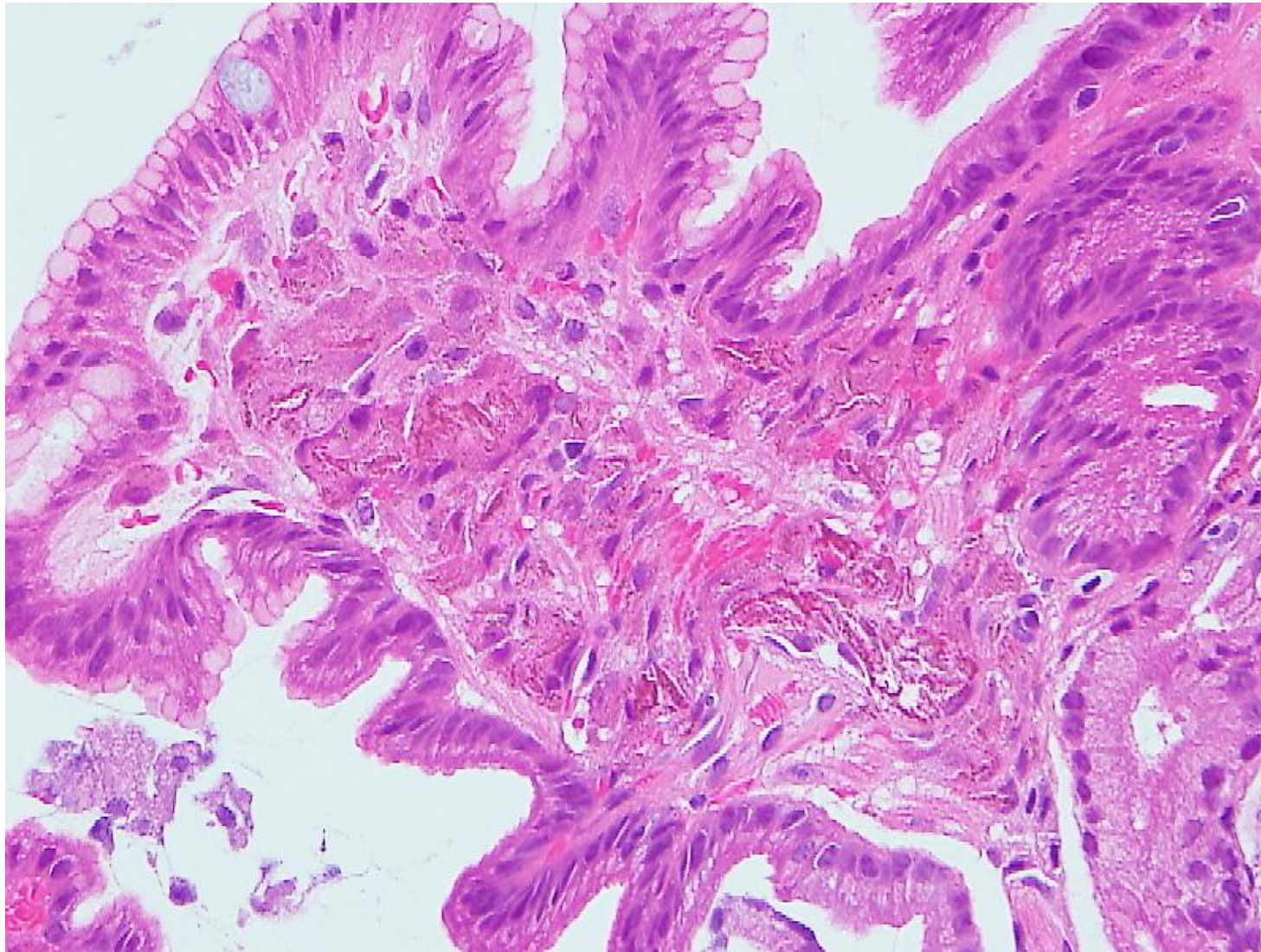
Ref.: Shitomi Y, et al. Gastric lanthanosis (lanthanum deposition) in dialysis patients treated with lanthanum carbonate. *Pathol Int* 2017; 67(8): 389-397.
doi: 10.1111/pin.12558



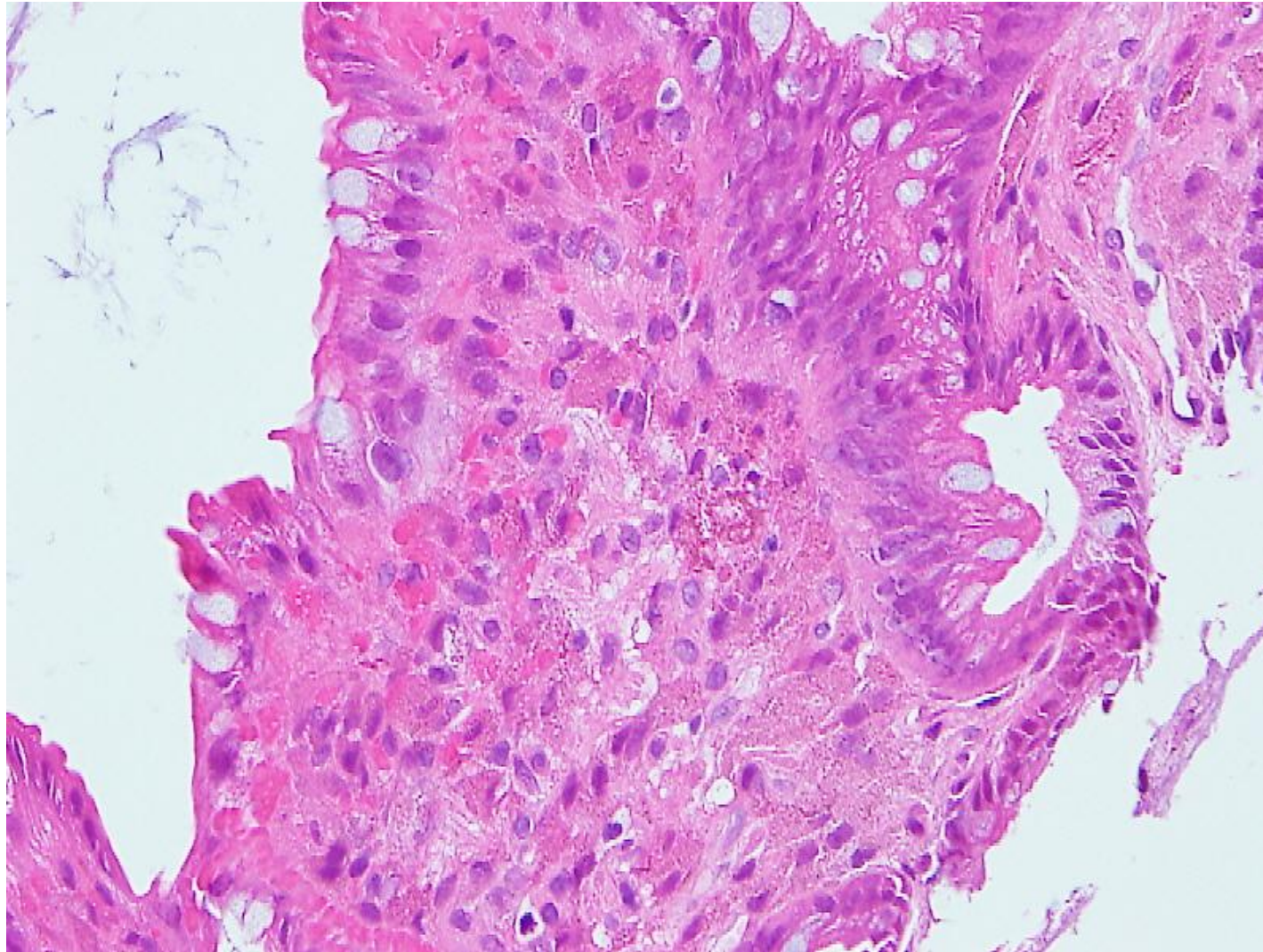
Lanthanum carbonate deposition in the gastric mucosa of a 63-year-old male patient on hemodialysis for chronic renal failure. Epithelioid macrophages are clustered in the lamina propria mucosae, engulfing brownish-colored crystalloid material. H&E-1



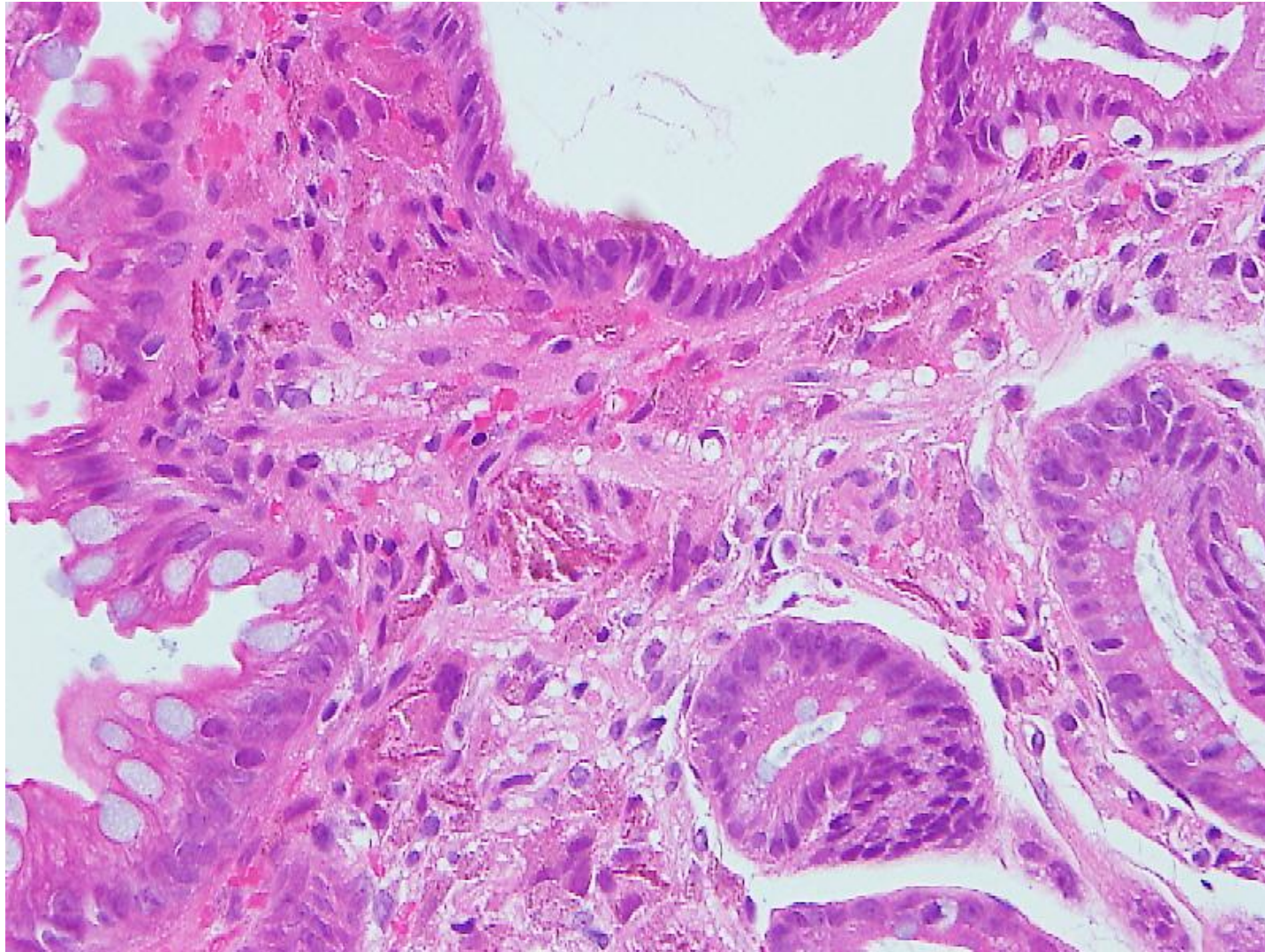
Lanthanum carbonate deposition in the gastric mucosa of a 63-year-old male patient on hemodialysis for chronic renal failure. Epithelioid macrophages are clustered in the lamina propria mucosae, engulfing brownish-colored crystalloid material. H&E-2



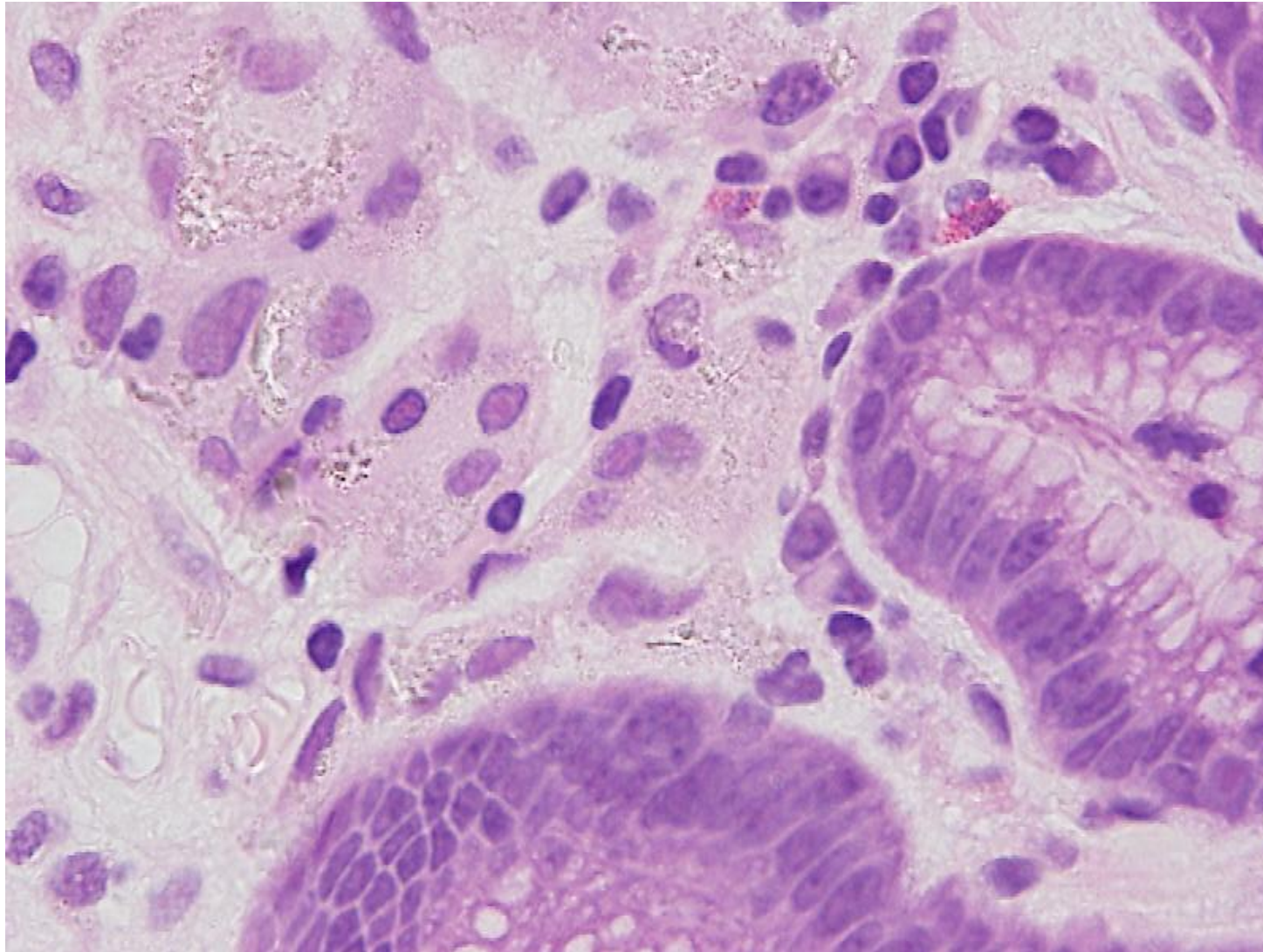
Lanthanum carbonate deposition in the gastric mucosa of a 63-year-old male patient on hemodialysis for chronic renal failure. Epithelioid macrophages are clustered in the lamina propria mucosae, engulfing brownish-colored crystalloid material. H&E-3



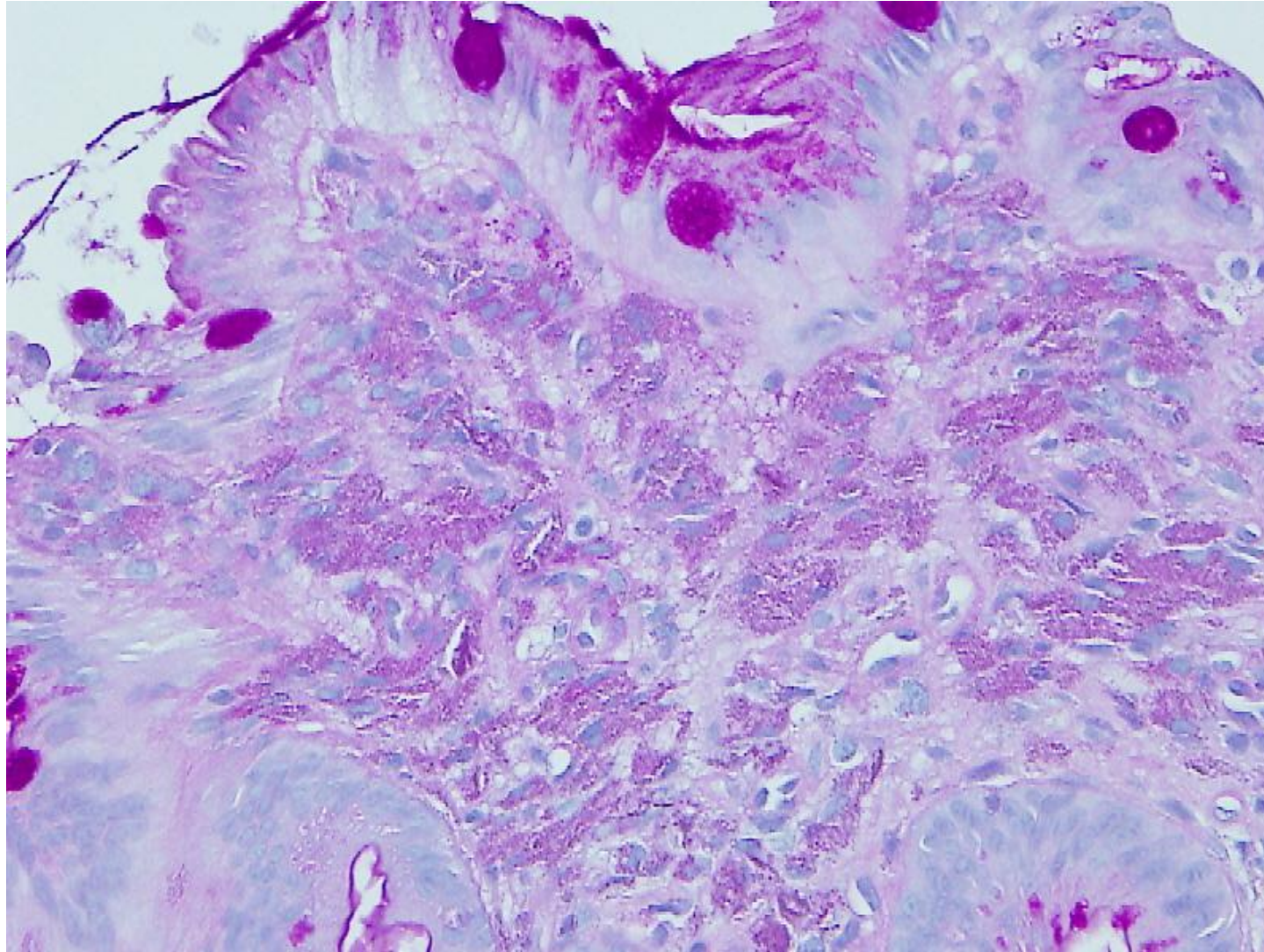
Lanthanum carbonate deposition in the gastric mucosa of a 63-year-old male patient on hemodialysis for chronic renal failure. Epithelioid macrophages are clustered in the lamina propria mucosae, engulfing brownish-colored crystalloid material. H&E-4



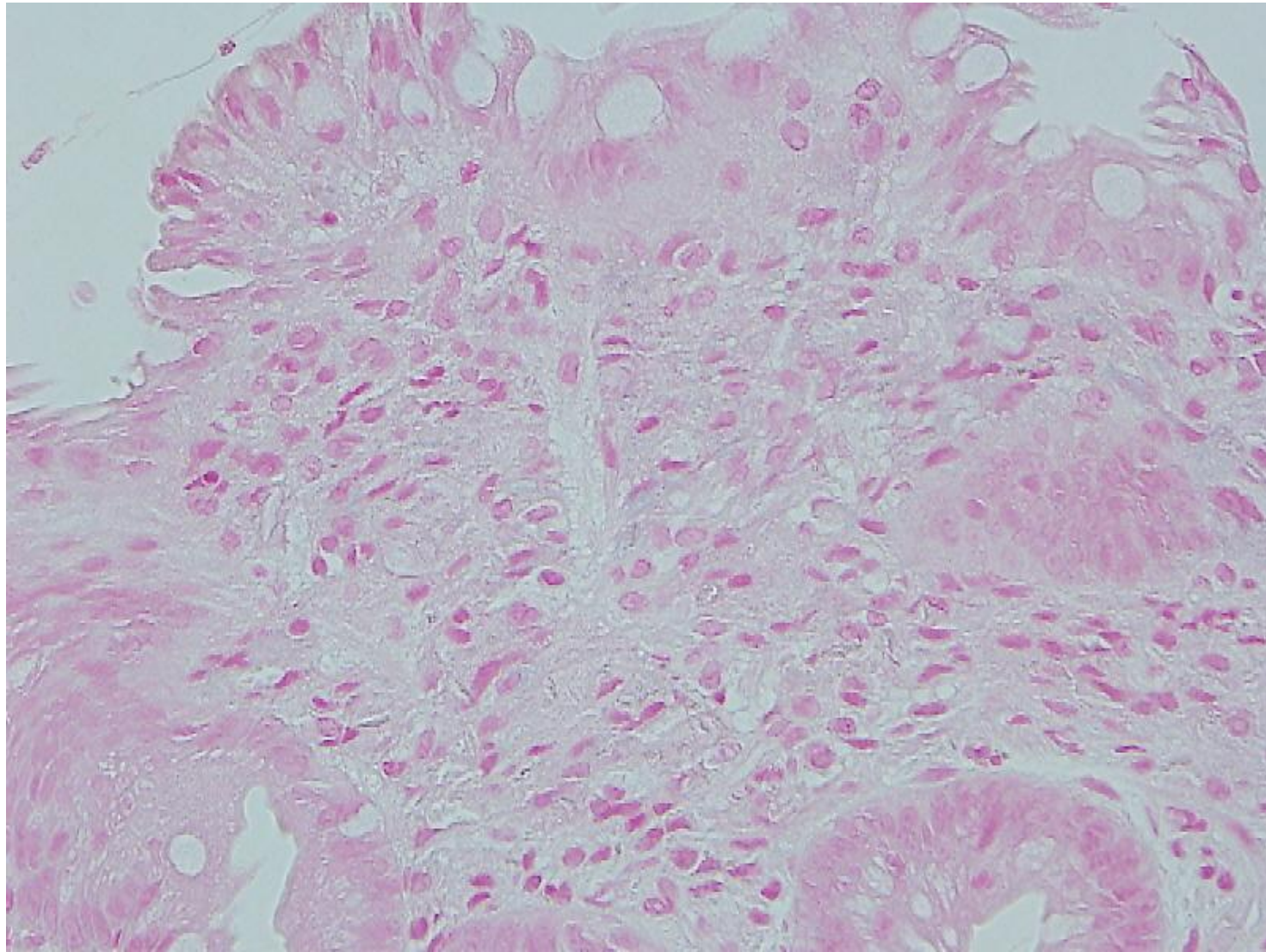
Lanthanum carbonate deposition in the gastric mucosa of a 63-year-old male patient on hemodialysis for chronic renal failure. Epithelioid macrophages are clustered in the lamina propria mucosae, engulfing brownish-colored crystalloid material. H&E-5



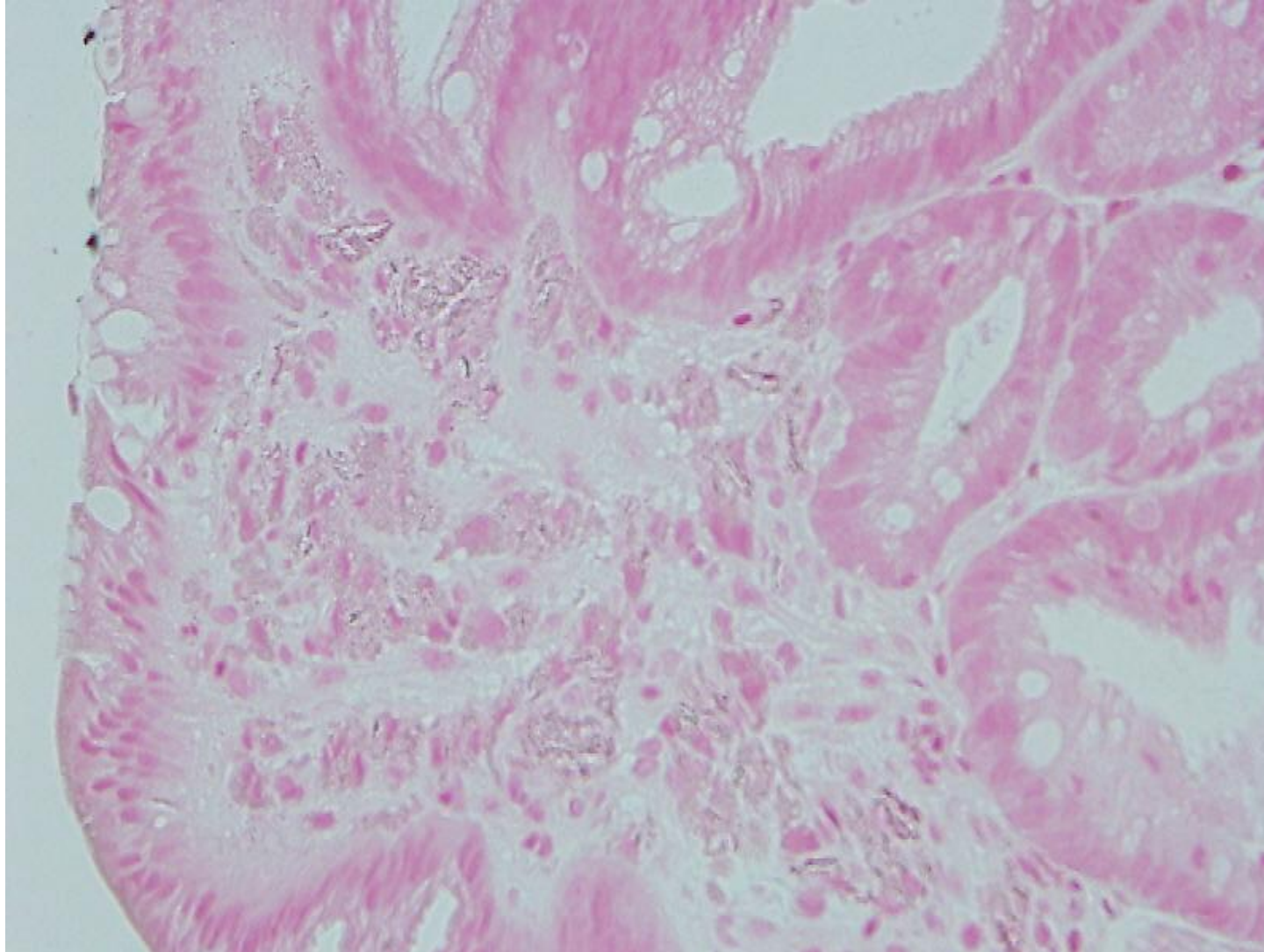
Lanthanum carbonate deposition in the gastric mucosa of a 63-year-old male patient on hemodialysis for chronic renal failure. Epithelioid macrophages are clustered in the lamina propria mucosae, engulfing brownish-colored crystalloid material. The deposits are birefringent. H&E-6



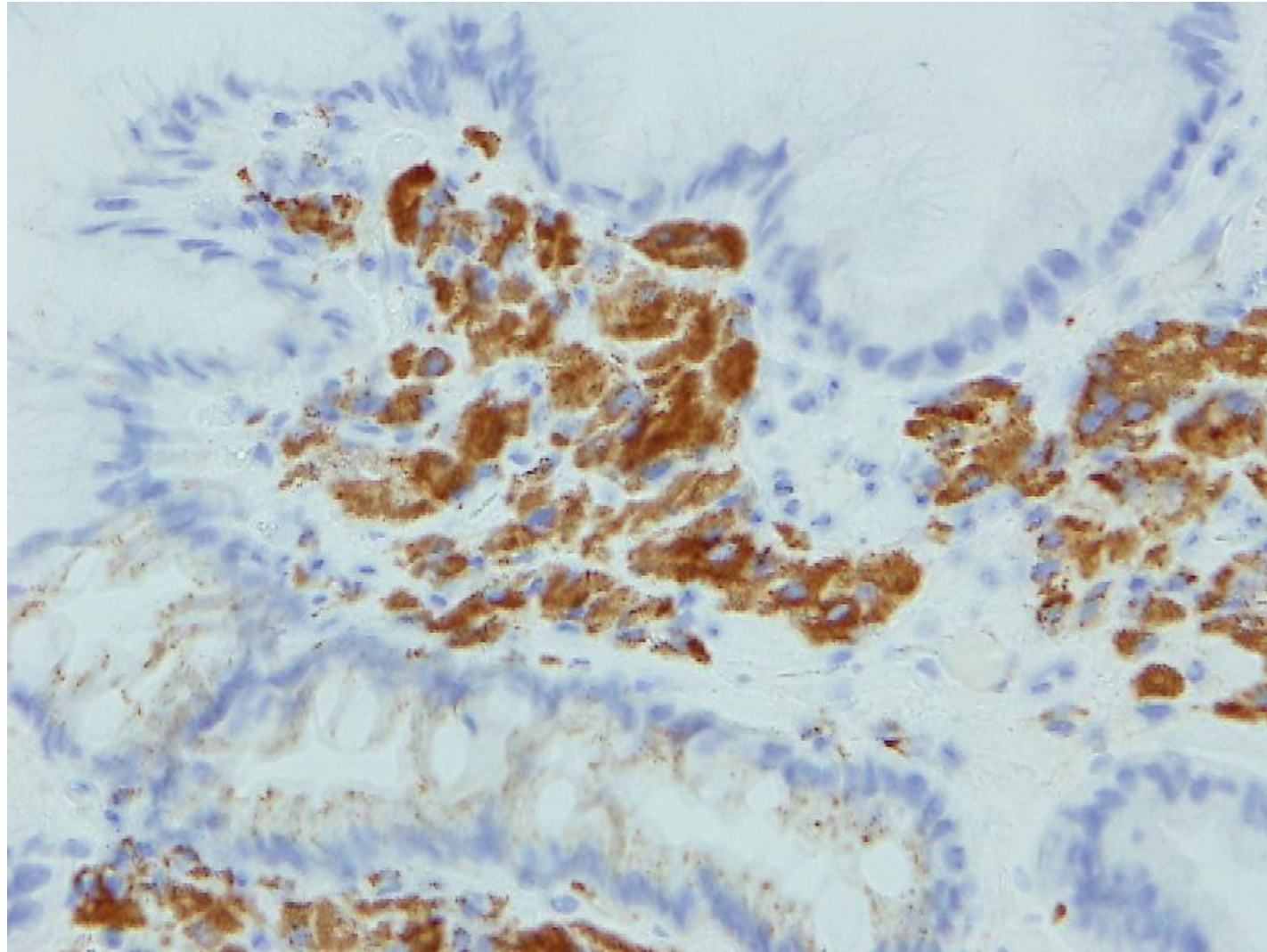
Lanthanum carbonate deposition in the gastric mucosa of a 63-year-old male patient on hemodialysis for chronic renal failure. Epithelioid macrophages are clustered in the lamina propria mucosae, engulfing PAS-reactive crystalloid material. PAS



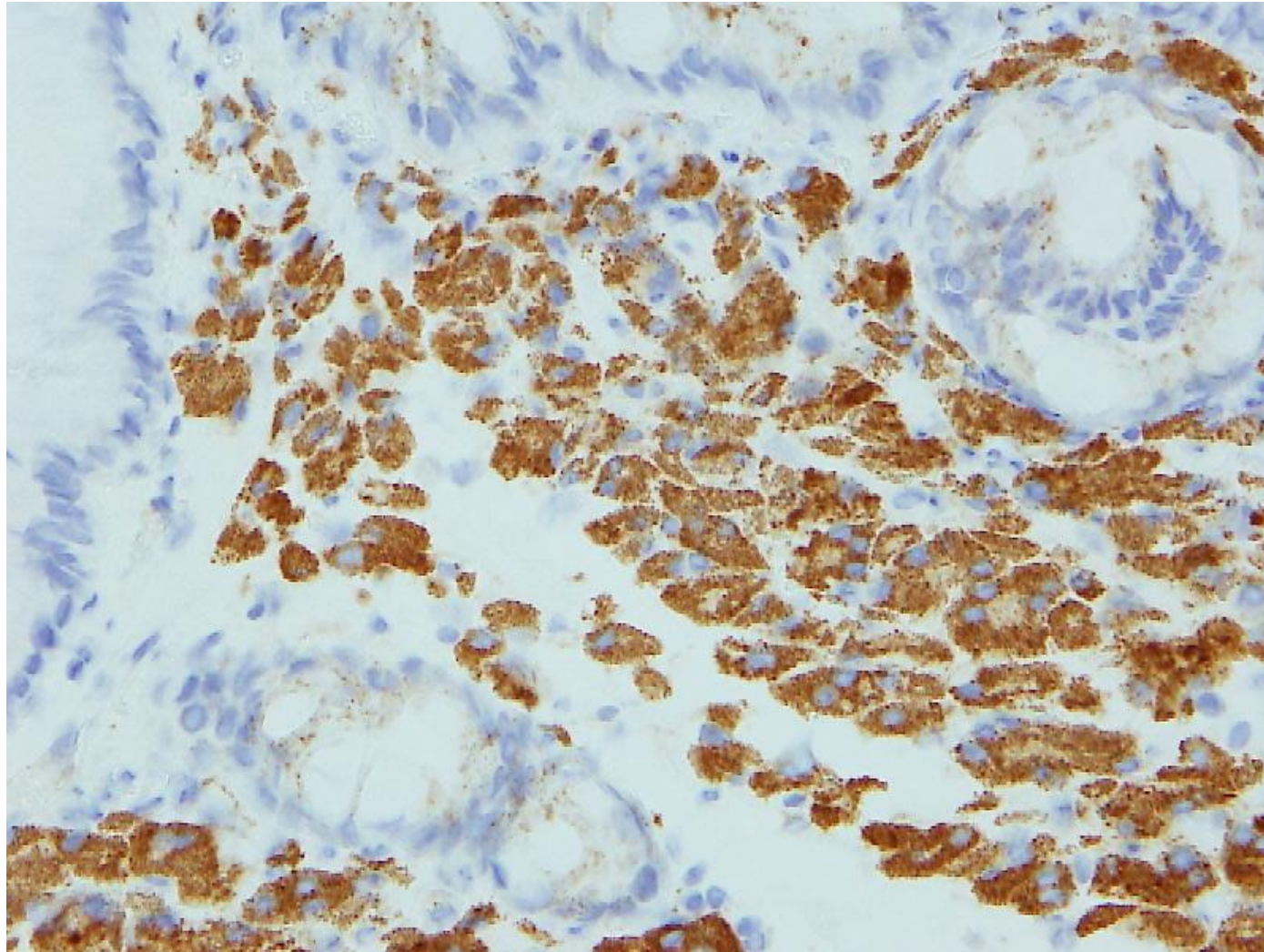
Lanthanum carbonate deposition in the gastric mucosa of a 63-year-old male patient on hemodialysis for chronic renal failure. The deposits in epithelioid macrophages are negative with Berlin blue staining. Berlin blue



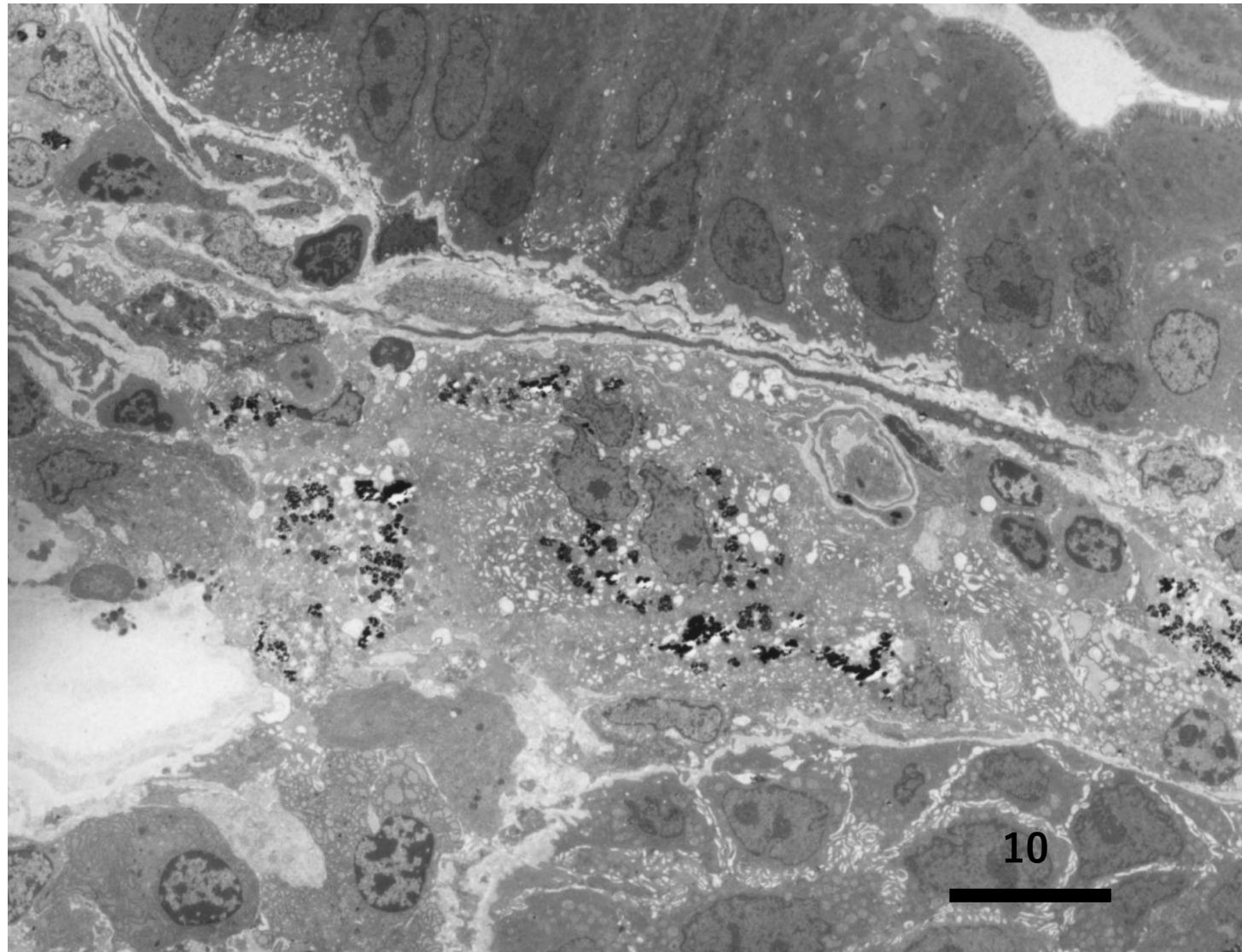
Lanthanum carbonate deposition in the gastric mucosa of a 63-year-old male patient on hemodialysis for chronic renal failure. The deposits in epithelioid macrophages are negative with Fontana-Masson argentaffin reaction. Fontana-Masson staining



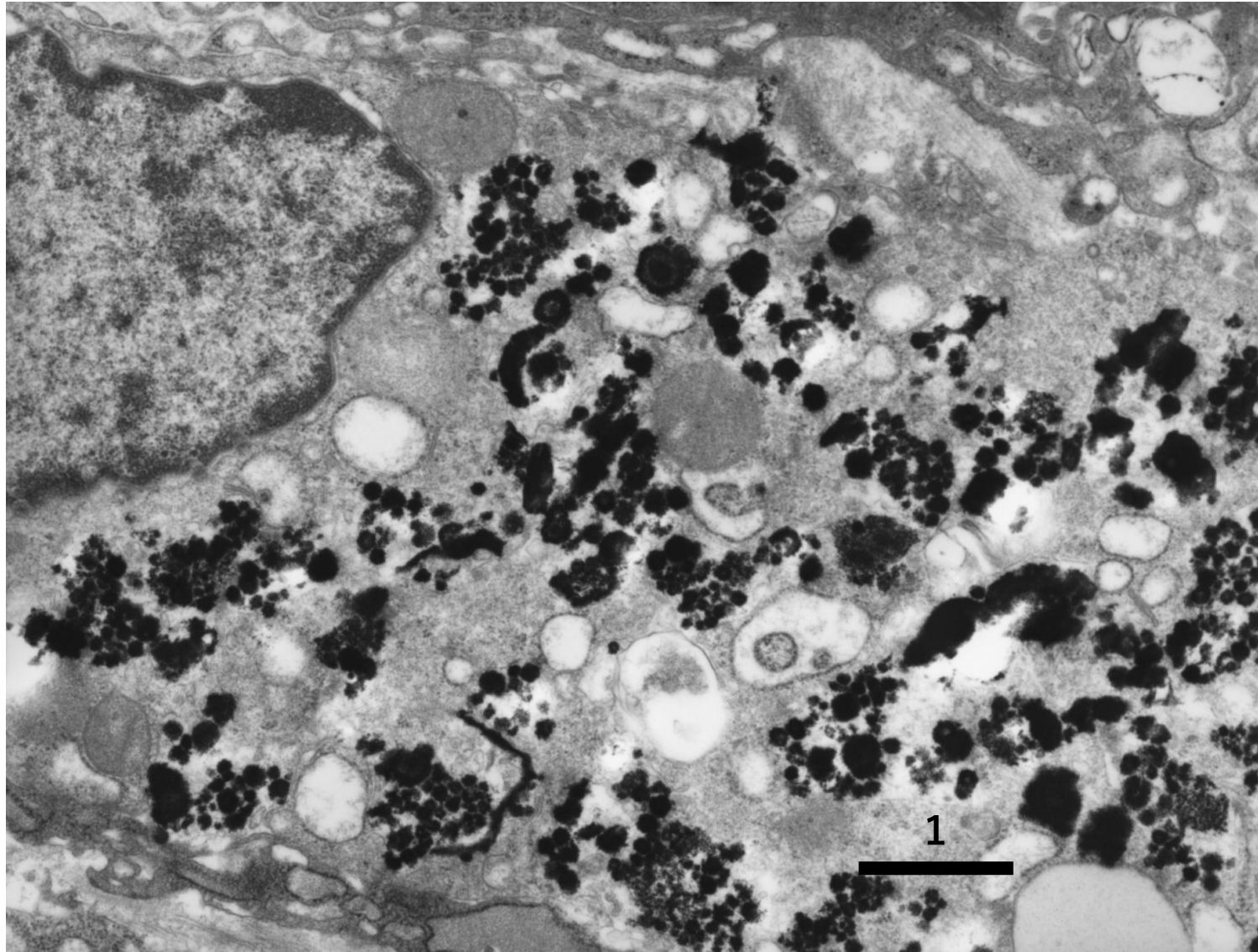
Lanthanum carbonate deposition in the gastric mucosa of a 63-year-old male patient on hemodialysis for chronic renal failure. The epithelioid macrophages engulfing the deposits are immunoreactive for CD68. Immunostaining for CD68 (1)



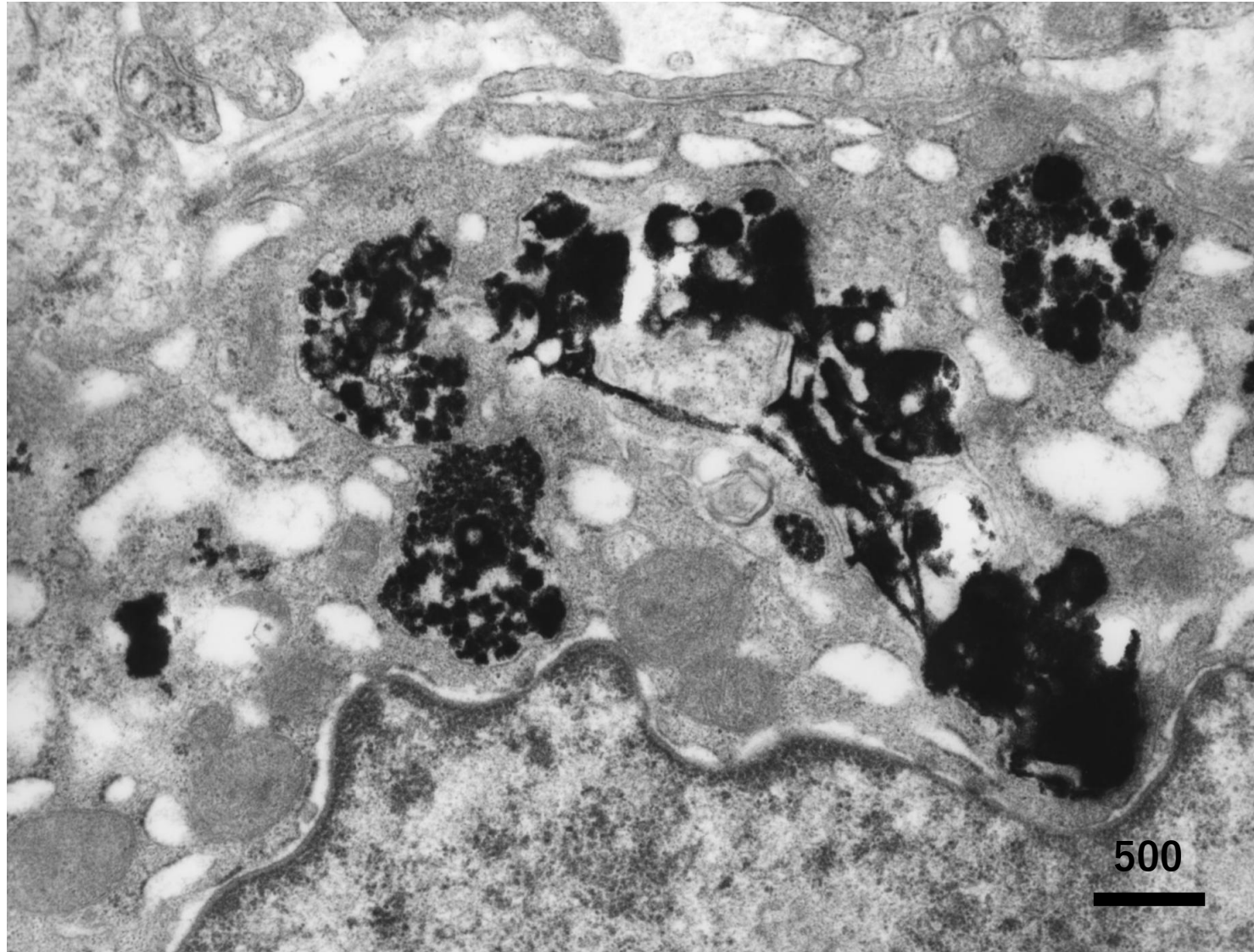
Lanthanum carbonate deposition in the gastric mucosa of a 63-year-old male patient on hemodialysis for chronic renal failure. The epithelioid macrophages engulfing the deposits are immunoreactive for CD68. Immunostaining for CD68 (2)



Ultrastructure of Lanthanum carbonate deposition in the lamina propria mucosae of the gastric mucosa of a 63-year-old male patient on hemodialysis for chronic renal failure. Electron-dense, coarsely granular material is seen in the cytoplasm of macrophages. EM-1



Ultrastructure of Lanthanum carbonate deposition in the lamina propria mucosae of the gastric mucosa of a 63-year-old male patient on hemodialysis for chronic renal failure. Electron-dense, coarsely granular and targetoid material is seen in the cytoplasm of macrophages. EM-2



Ultrastructure of Lanthanum carbonate deposition in the lamina propria mucosae of the gastric mucosa of a 63-year-old male patient on hemodialysis for chronic renal failure. Electron-dense, coarsely granular and targetoid material is seen in the cytoplasm of macrophages. EM-3