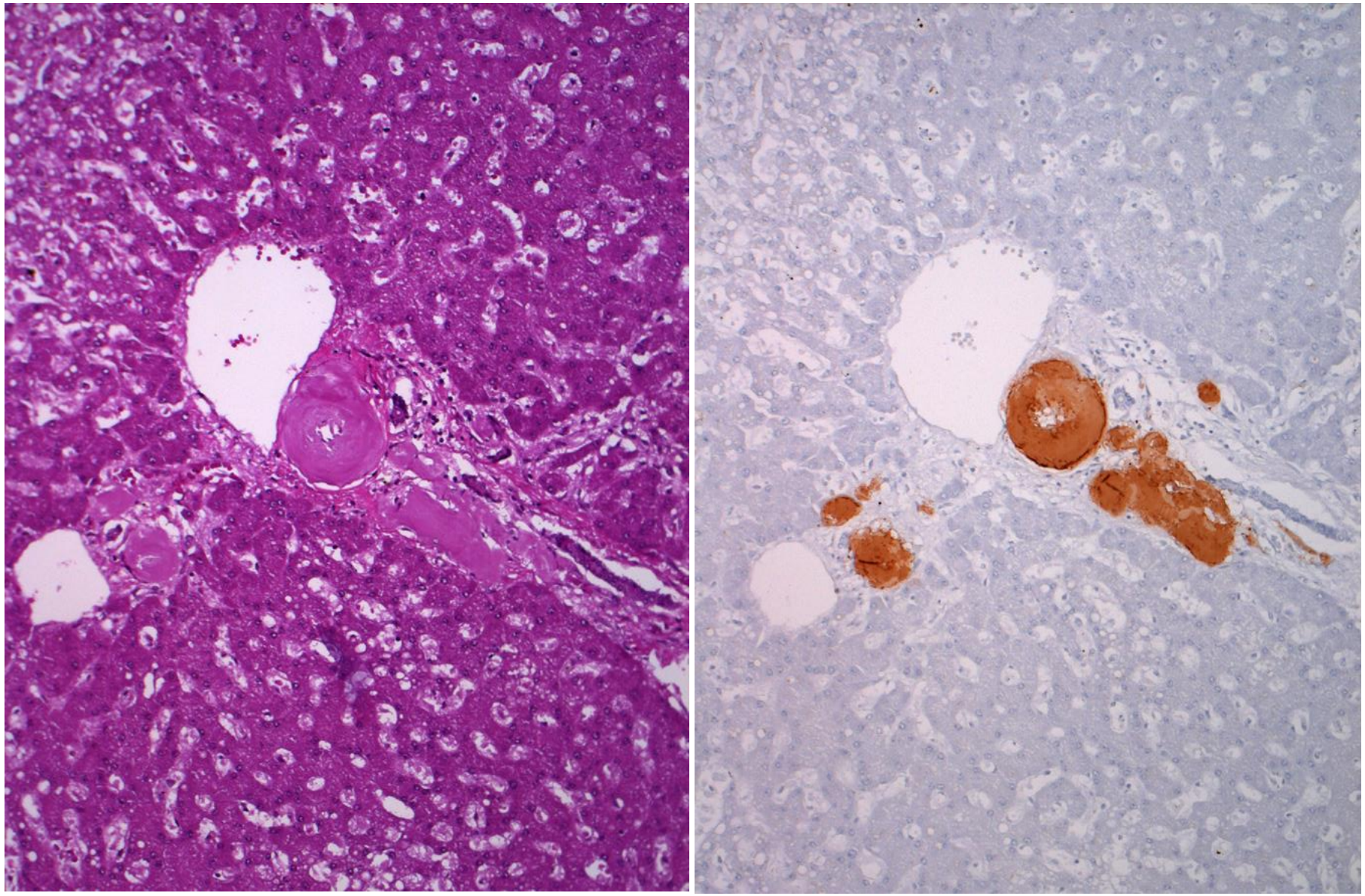
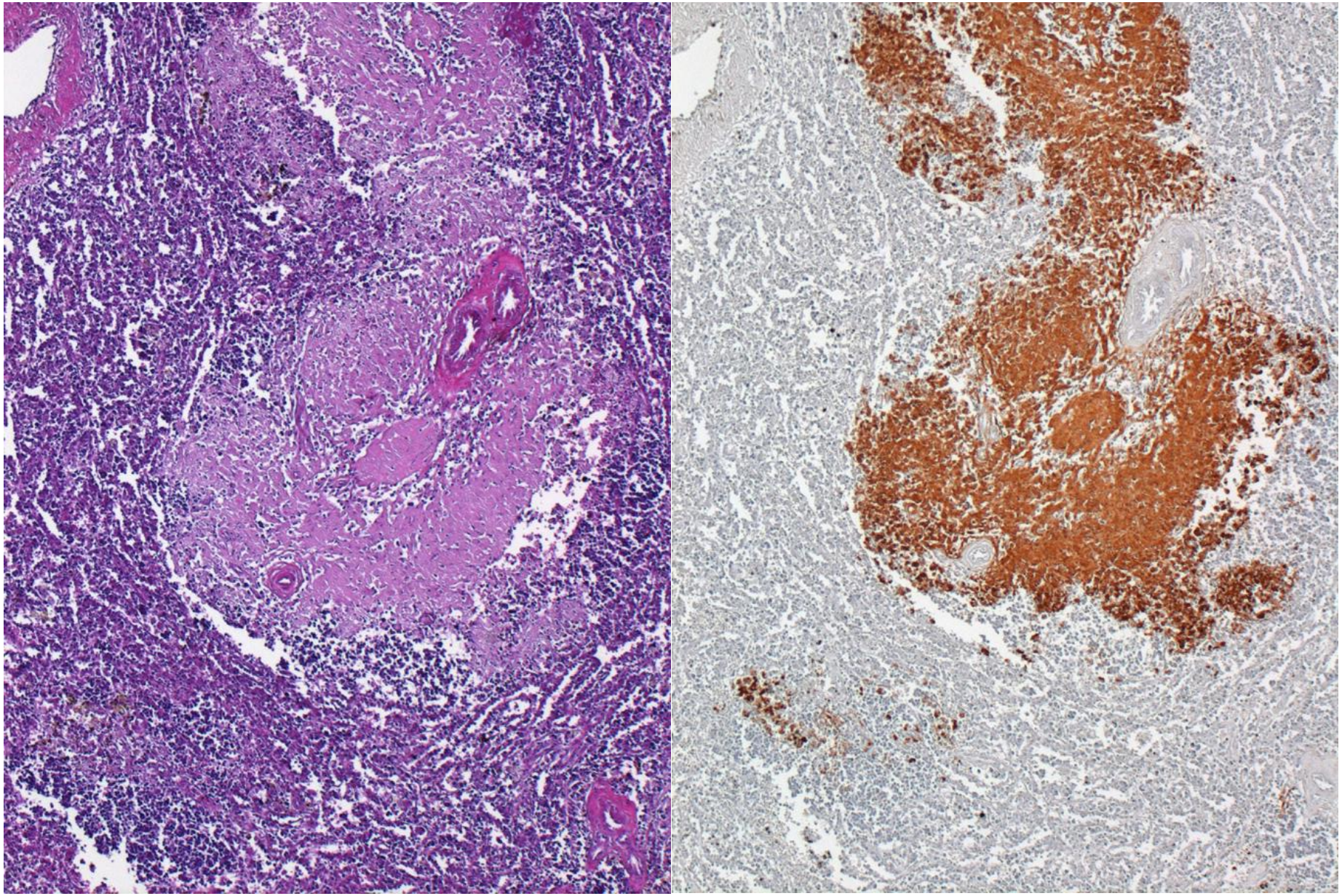
Hansen's disease and secondary amyloidosis

Secondary AA amyloidosis is a systemic complication of long-term inflammatory disorder, such as rheumatoid arthritis, tuberculosis and Hansen's disease. Extracellular deposition of water-insoluble amyloid fibrils occurs systemically. The fibrils derive from serum amyloid A (SAA) protein, an acute-phase reactant, synthetized by hepatocytes and pancreatic and salivary acinar cells. SAA production is controlled by inflammatory cytokines. The kidney is the major involved organ with proteinuria as first clinical manifestation, subsequently associated with nephrotic syndrome and chronic renal failure.

In Japan, treatment of lepromatous leprosy with Promin (glucosulfone sodium) started after the second world war II. The effective treatment provoked inflammatory response against *Mycobacterium leprae*, resulting in marked increase of secondary AA amyloidosis with nephrotic syndrome. The incidence was peaked in 1956-1965. A more than half of the autopsy cases of Hansen's disease were complicated with the systemic amyloidosis. Immune complex-related glomerulonephritis was also complicated.

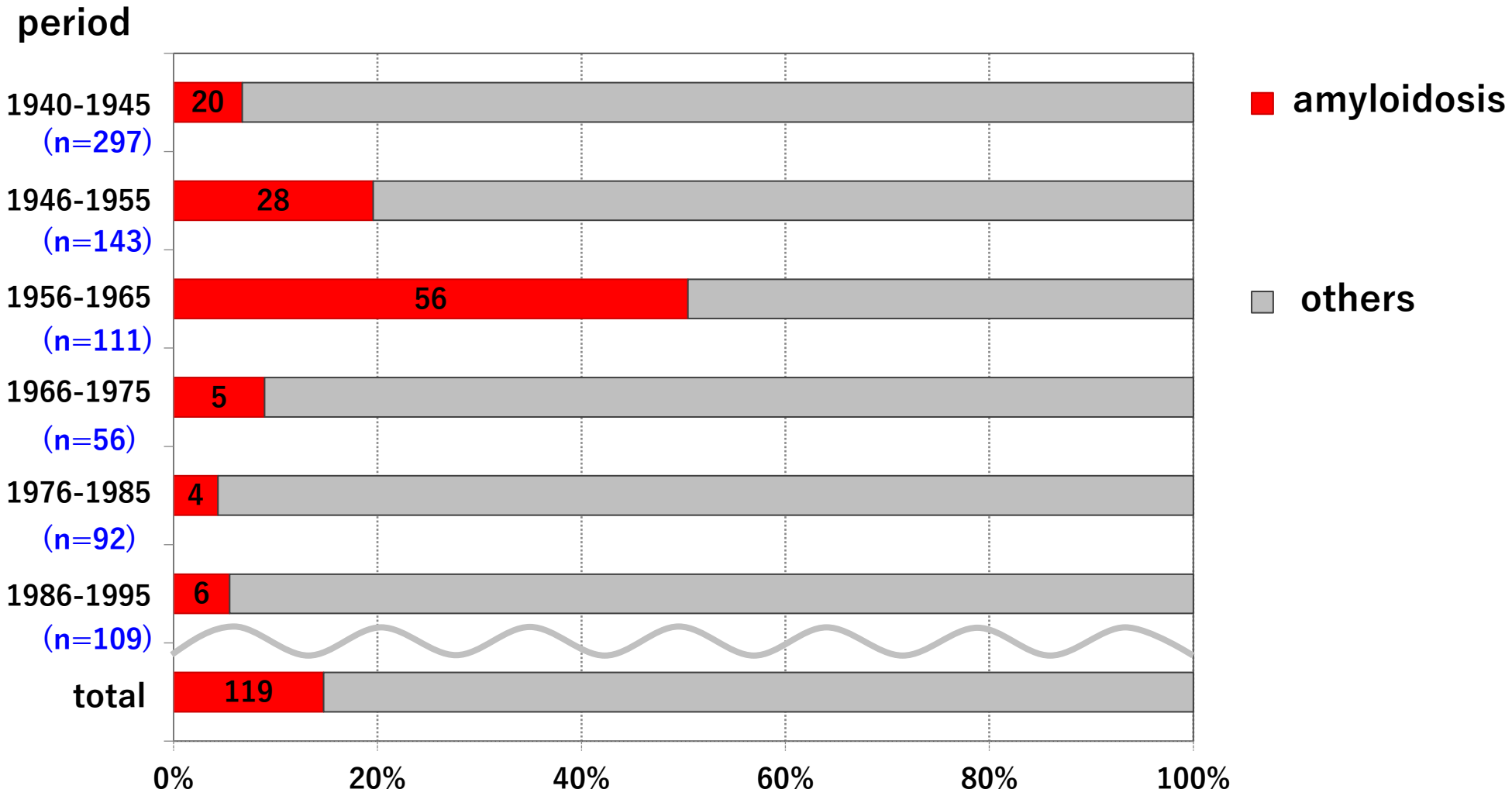


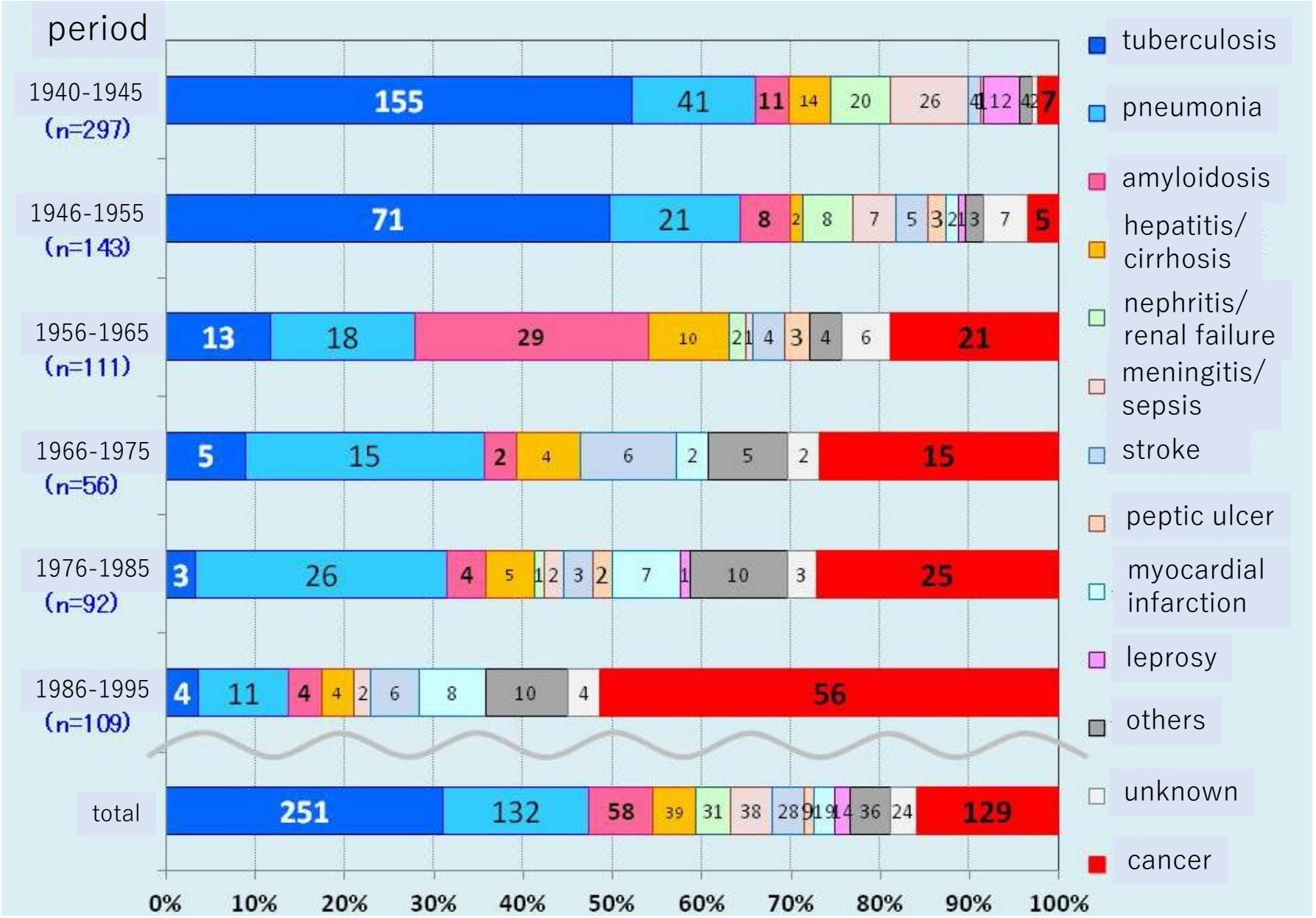
Secondary AA amyloidosis in the liver of Hansen's disease after Promin treatment.
Amyloid deposition is seen in the vascular wall. No leproma remains in the liver.
(left: H&E, right: immunostaining for amyloid A protein)



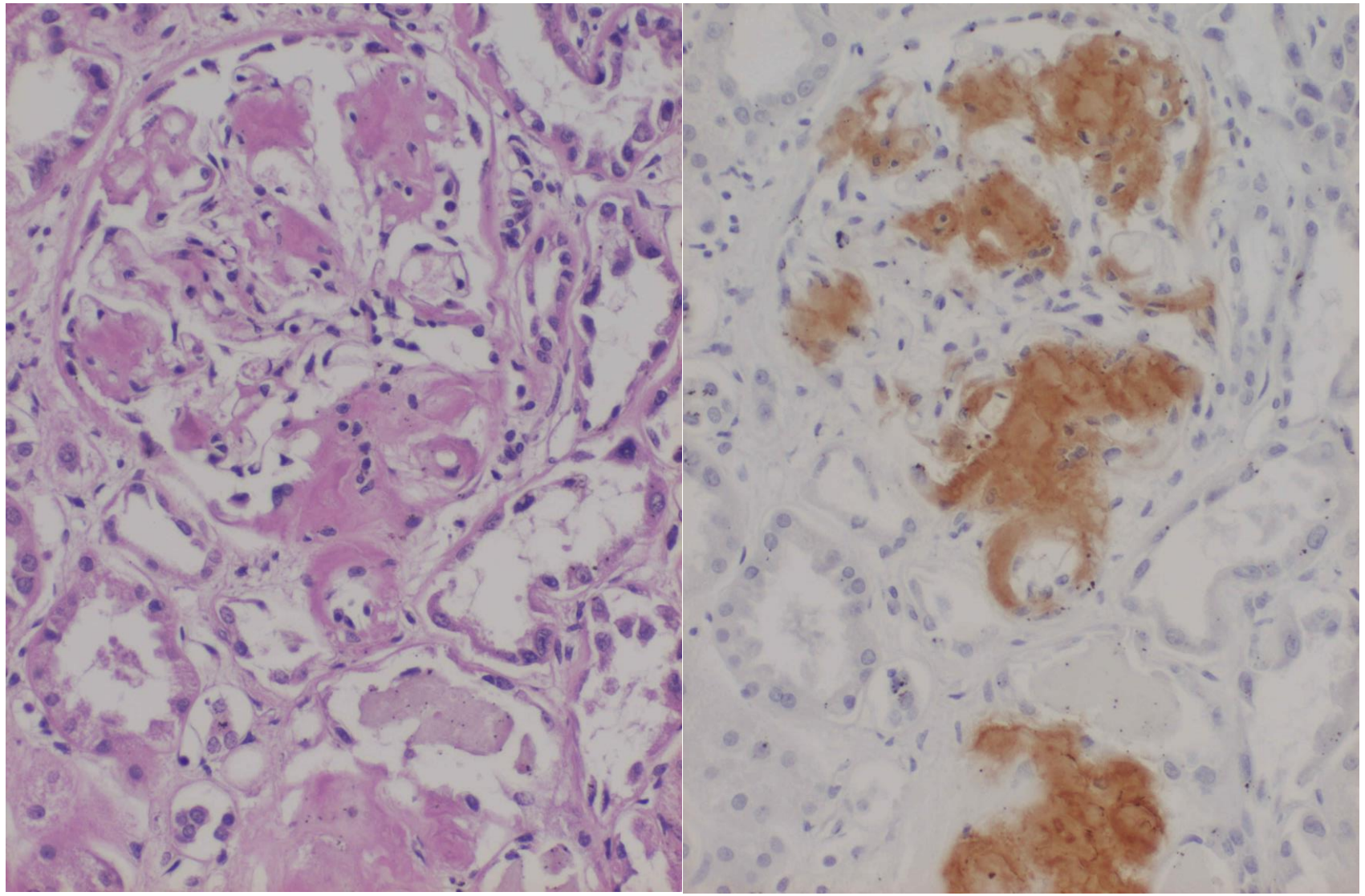
Secondary AA amyloidosis in the spleen of Hansen's disease after Promin treatment. Amyloid is deposited in the while pulp. No leproma remains in the spleen. (left: H&E, right: immunostaining for amyloid A protein)

Secondary amyloidosis in Hansen's disease in Japan: Autopsy analysis

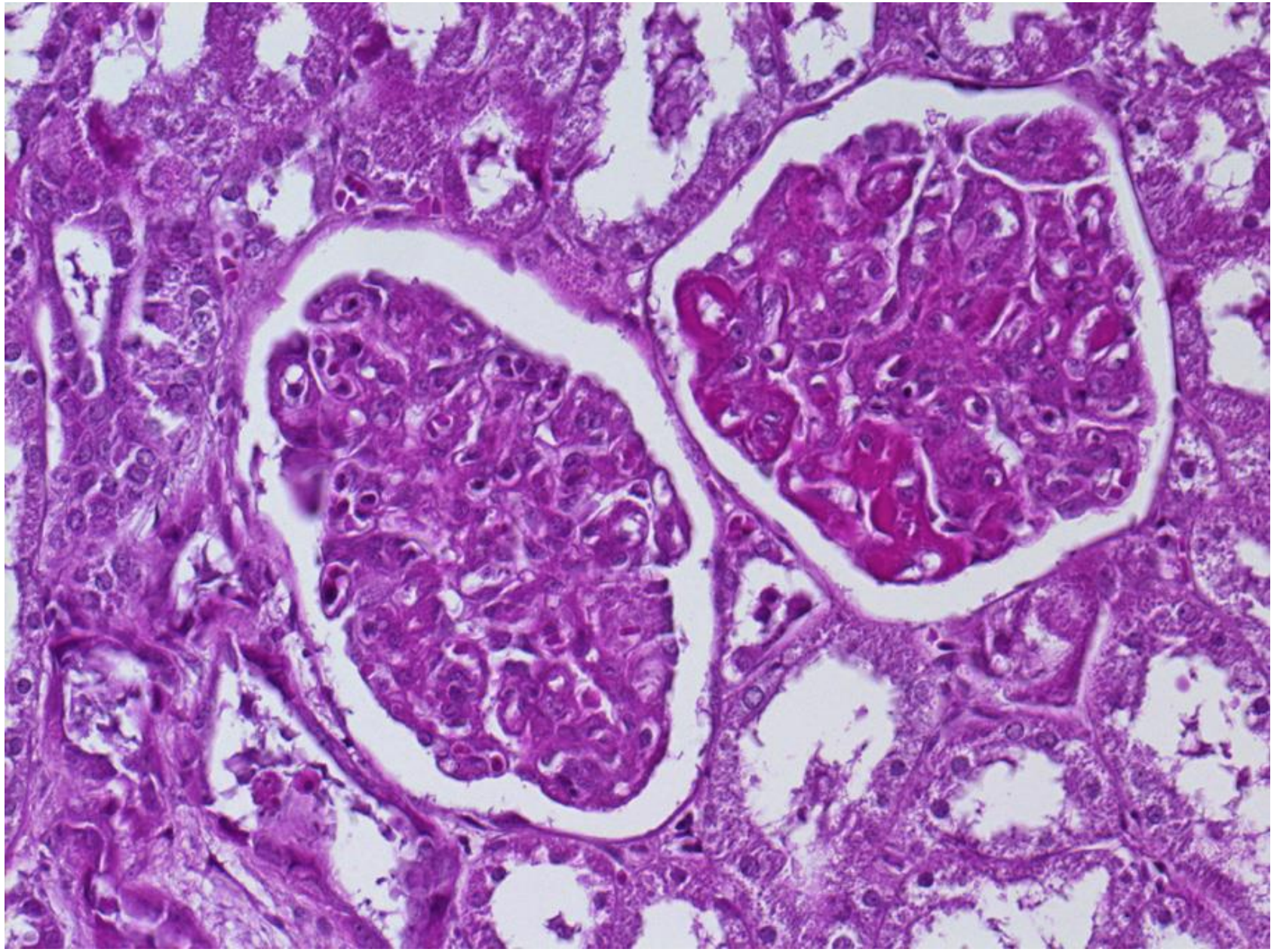




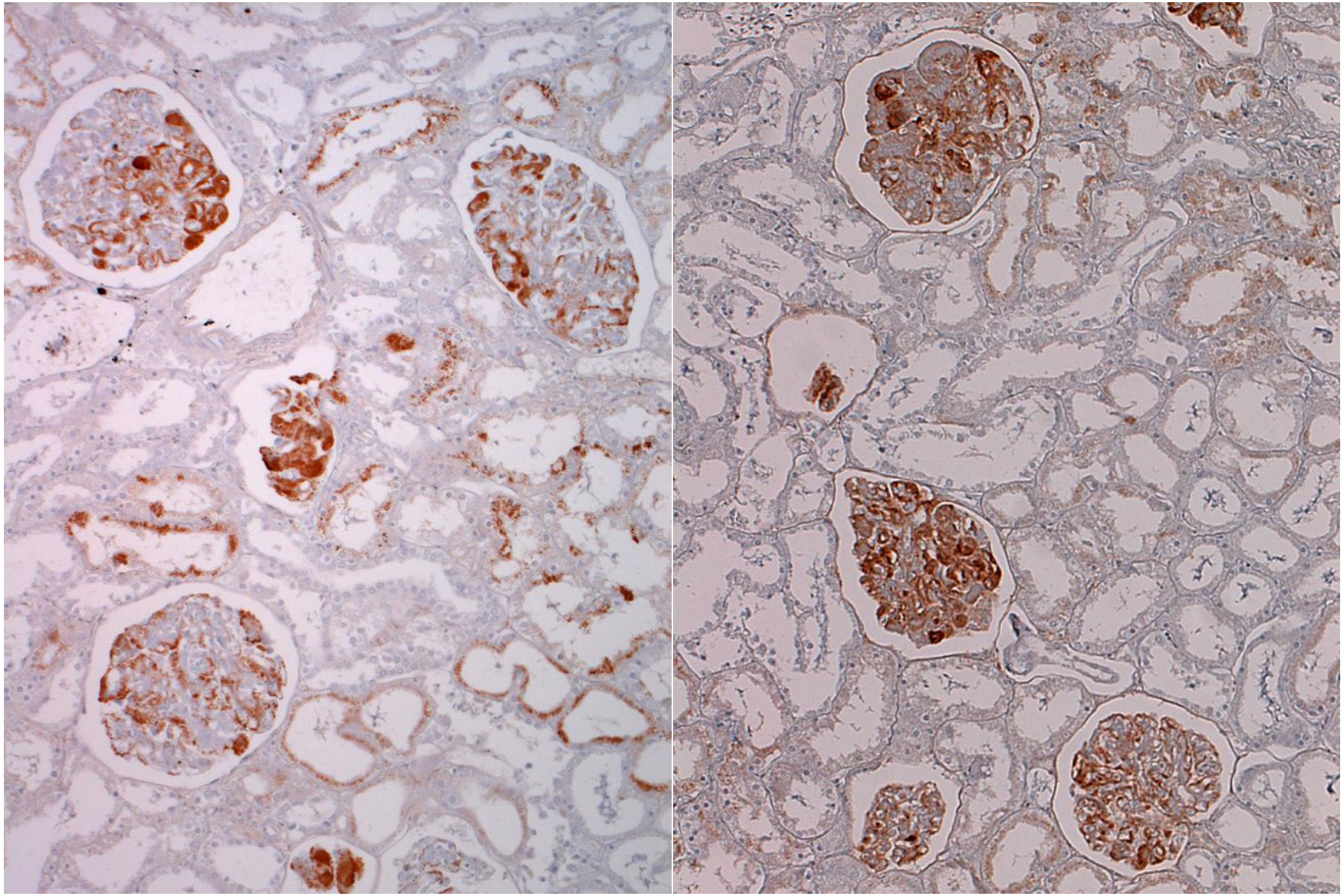
Direct cause of death of Hansen's disease from 1940-1995 in Japan (n = 808)



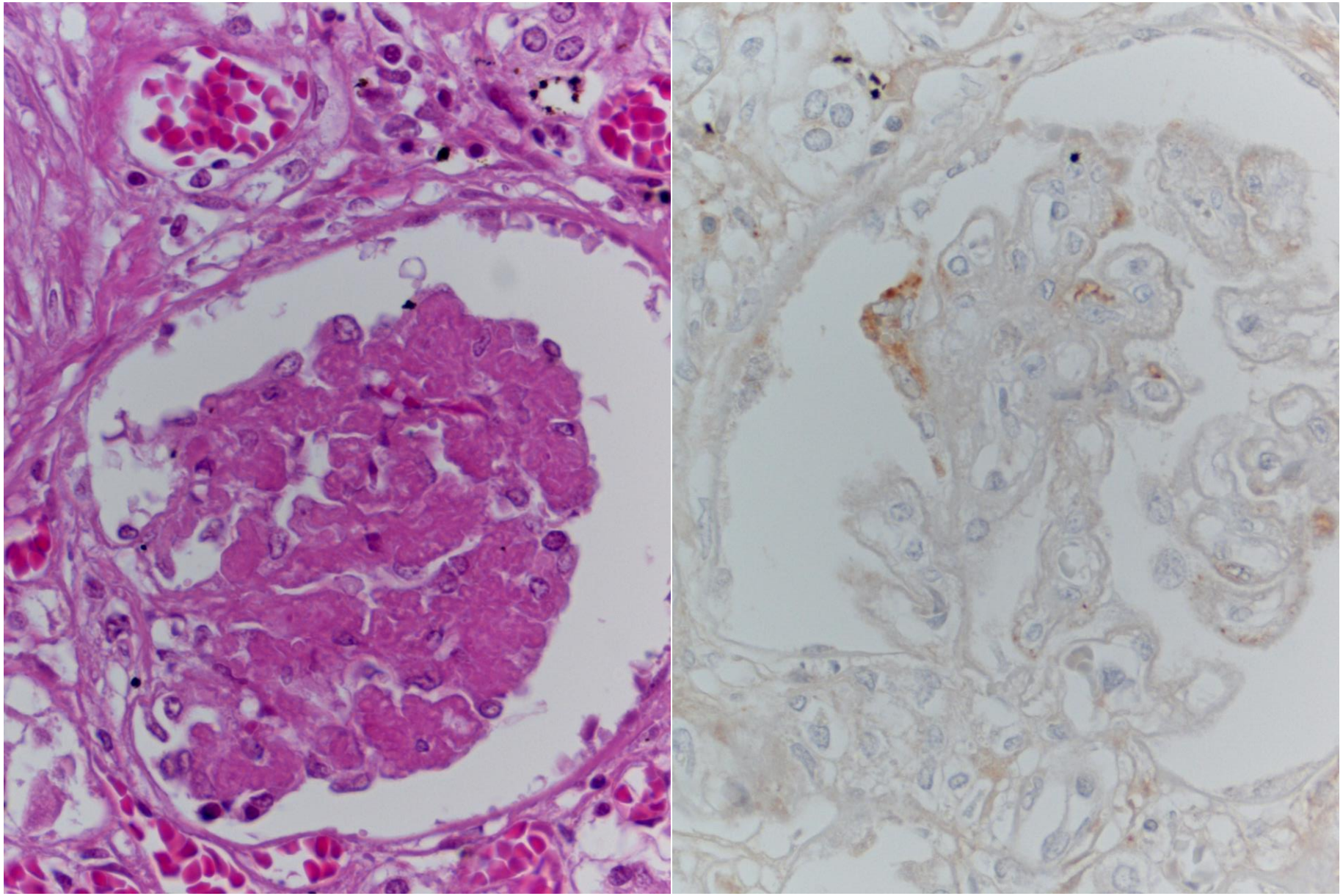
Secondary amyloidosis of the kidney seen in an autopsy case of Hansen's disease after Promin treatment. Deposition of AA amyloid is observed mainly in the glomerulus, causing nephrotic syndrome with systemic edema. (left: H&E, right: immunostaining for amyloid A protein)



Membranoproliferative glomerulonephritis-like immune complex-related glomerulonephritis seen in an autopsy case of leprosy after Promin treatment. Wire loop-like change is discerned. H&E



Membranoproliferative glomerulonephritis-like immune complex-related glomerulonephritis seen in an autopsy case of leprosy after Promin treatment. (left: IgG, right: C3, immunostaining after proteinase K pretreatment)



Membranous glomerulonephritis-like immune complex-related glomerulonephritis seen in an another autopsy case of leprosy after Promin treatment. (left: HE, right: C3, immunostaining after proteinase K pretreatment)