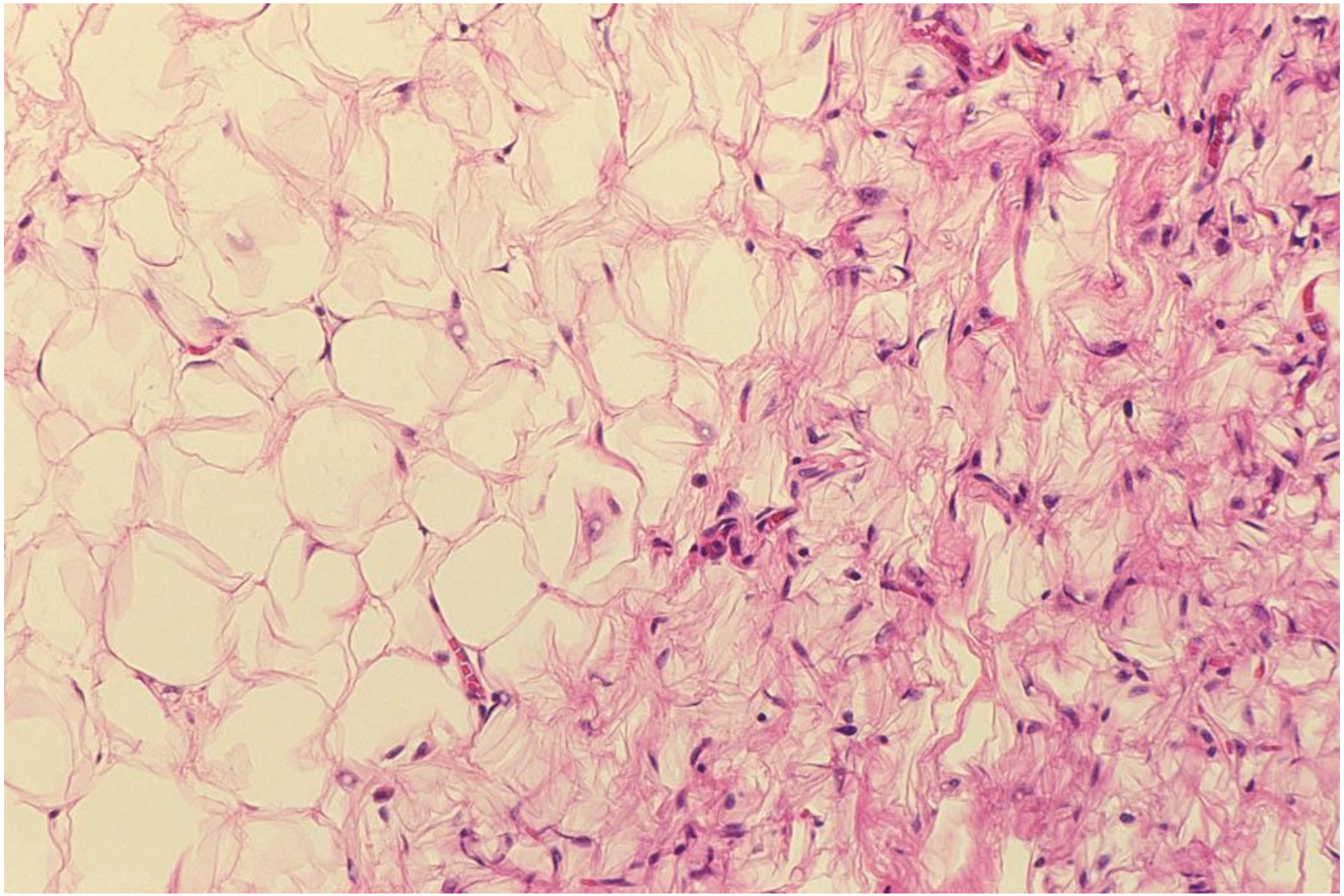
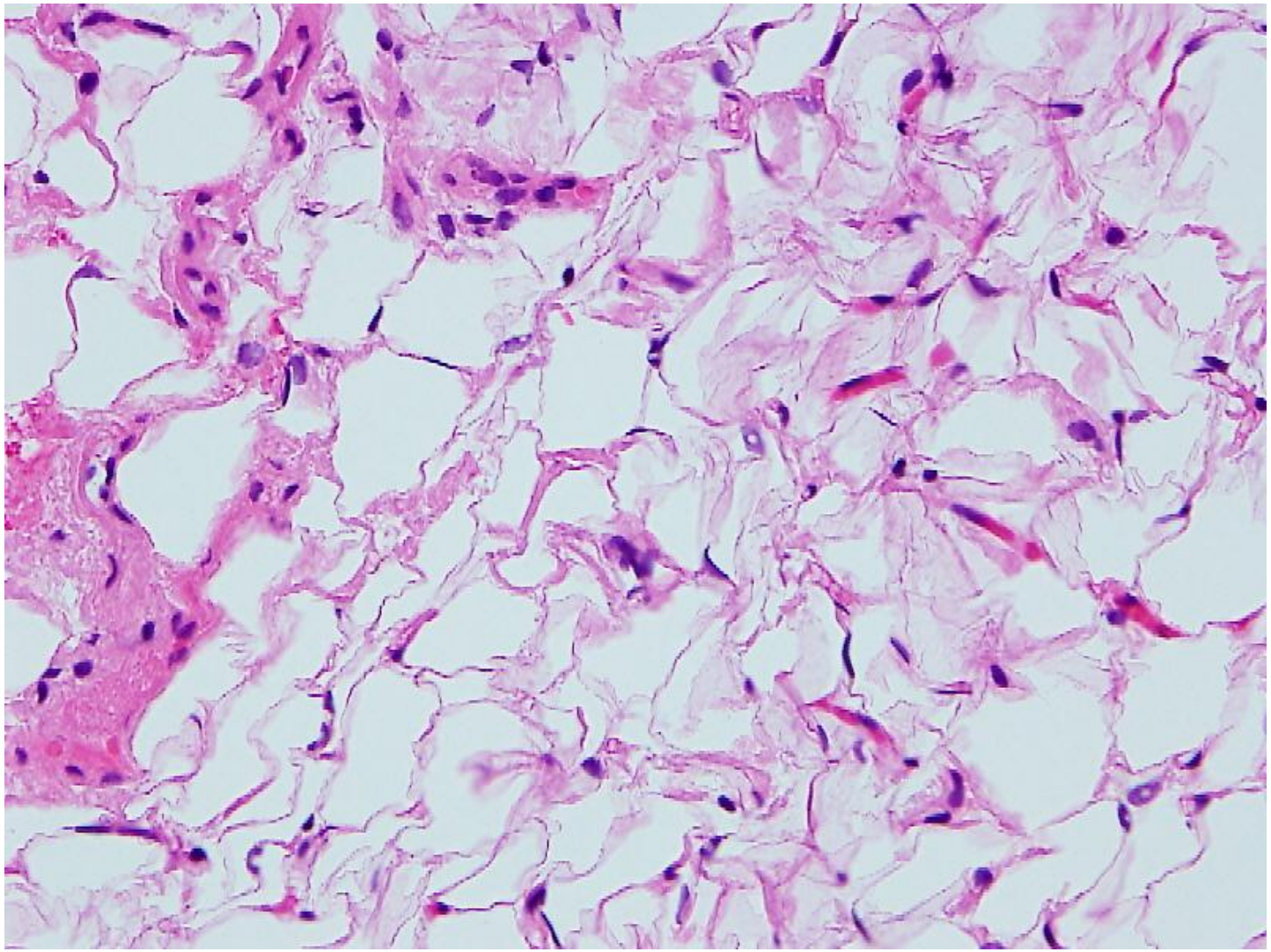
Serous atrophy of subcutaneous fat tissue

Serous fat atrophy (gelatinous transformation) is characterized by fat cell atrophy and deposition of extracellular mucopolysaccharides rich in hyaluronic acid and lacking chondroitin sulphate. The fat cells shows marked decrease of neutral fat and reactive increase of glycogen in the cytoplasm. The condition is associated with starvation, cancer-related cachexia, end-stage renal disease, myxedema, anorexia nervosa and infections. Systemic fat tissues, including the bone marrow, are involved. Regarding the peculiar features of fat cells, see ConnectT-89-a-SoftT.

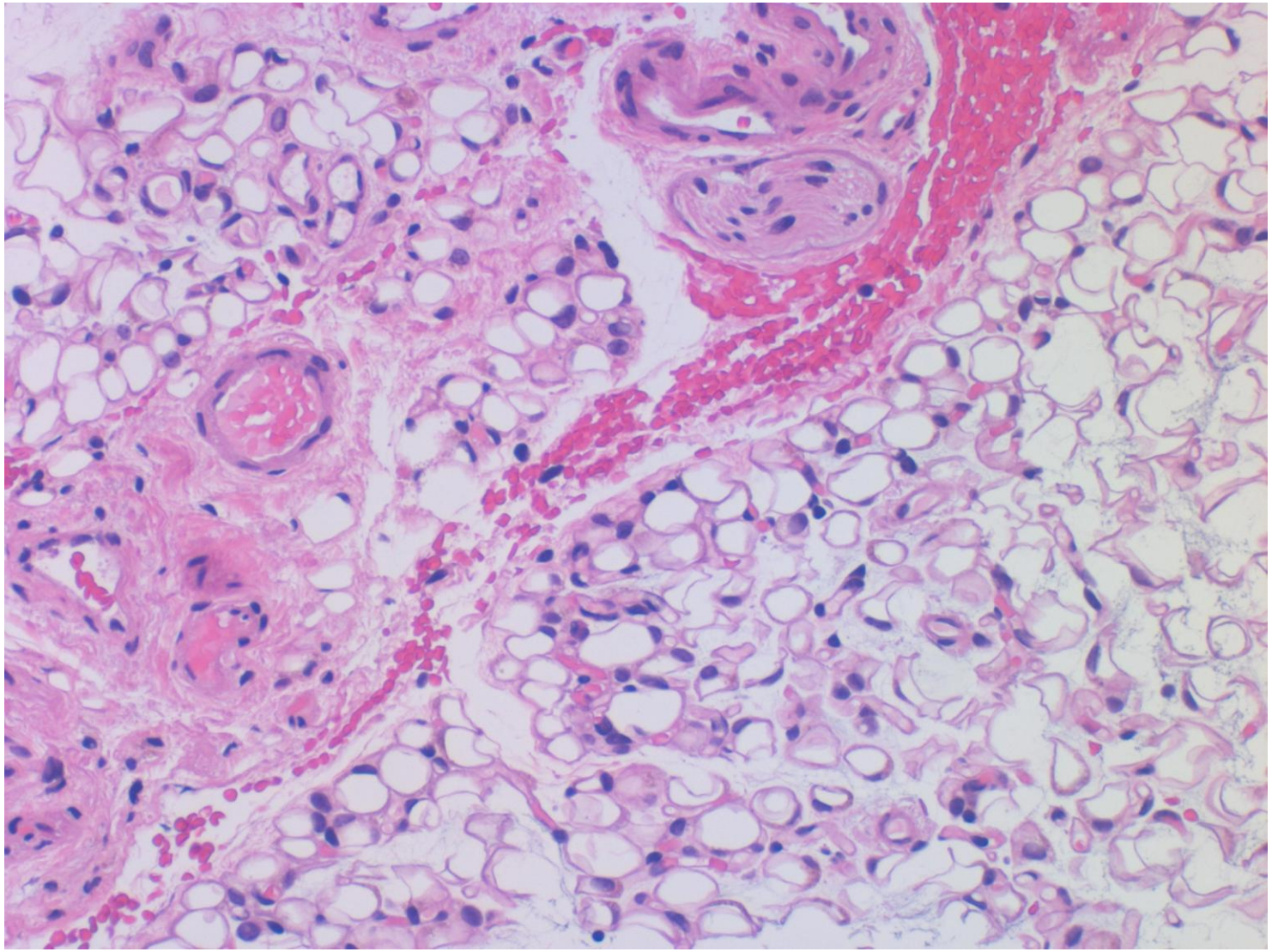
Ref.: Zhao X. Gelatinous transformation. PathologyOutlines.com website. 2025. https://www.pathologyoutlines.com/topic/bonemarrowseroustransformation.html



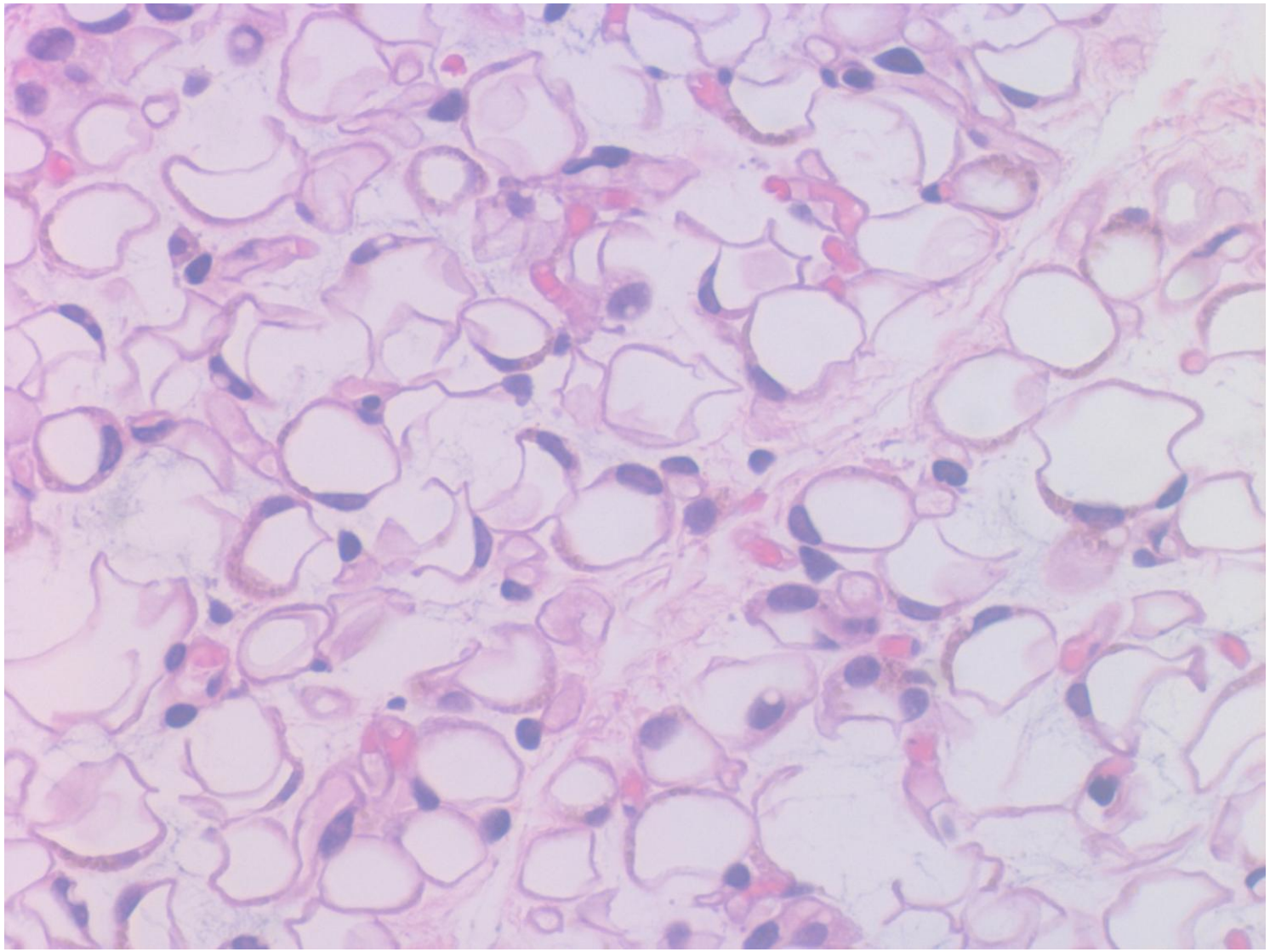
Serous fat atrophy (gelatinous transformation) of the subcutaneous fat tissue. Representative features of serous fat atrophy. In the right half of the picture, the fat cells are atrophic with markedly decreased fat content. Compare with the relative preserved mature fat cells in the left part (H&E-1).



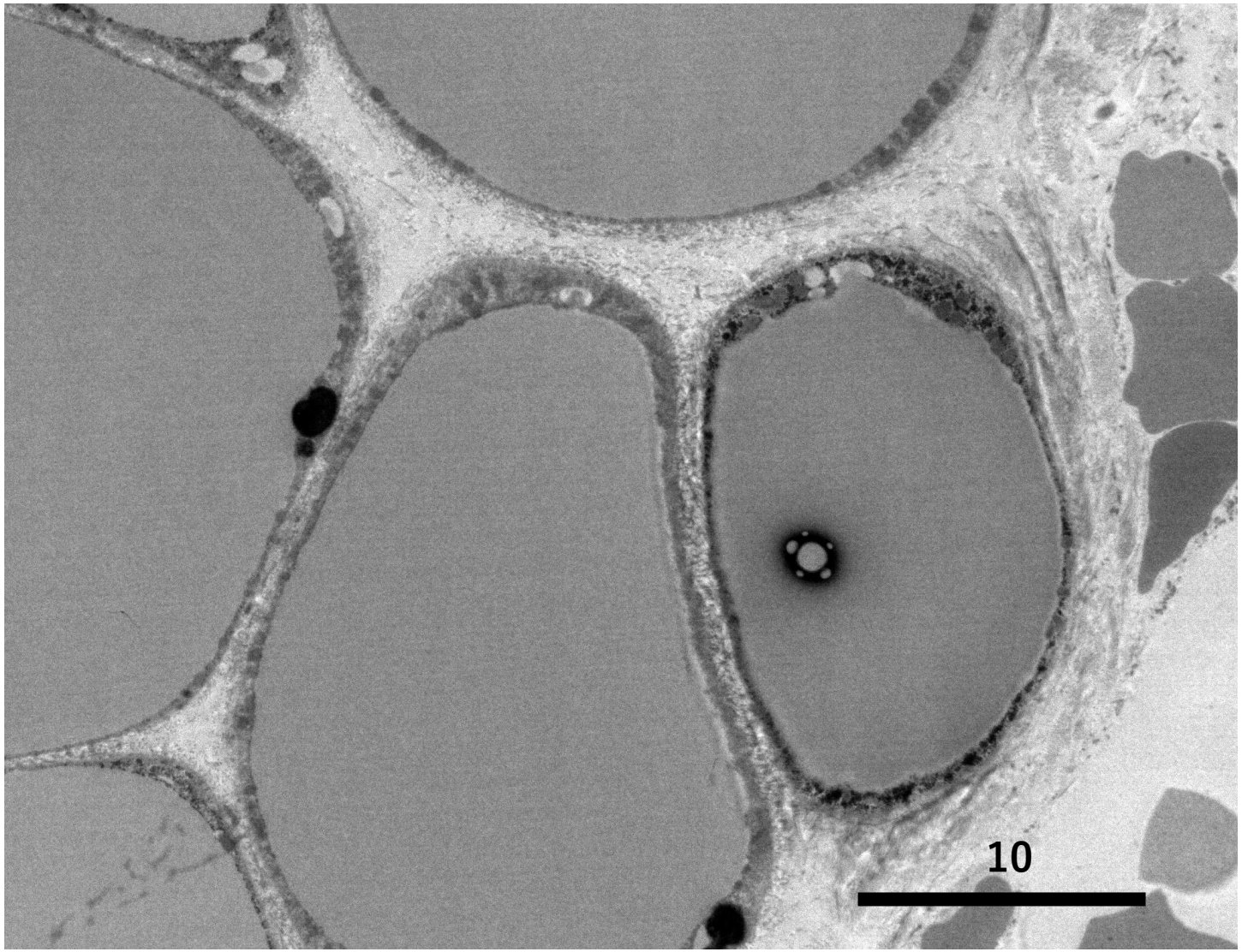
Serous fat atrophy (gelatinous transformation) of the subcutaneous fat tissue. Representative features of serous fat atrophy. The fat cells show collapsed and wrinkled plasma membrane, representing the decreased fat content (H&E-2).



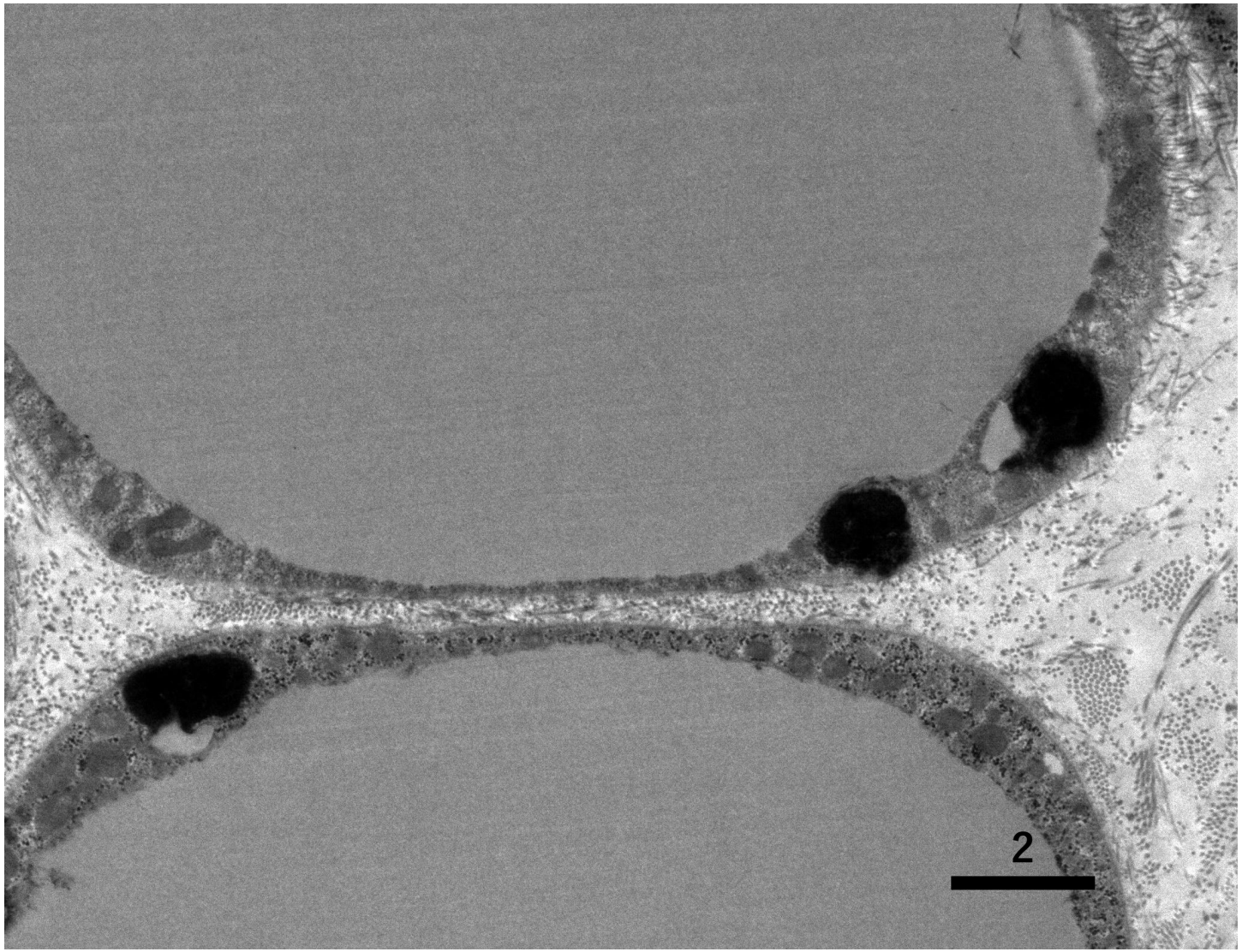
Serous fat atrophy (gelatinous transformation) of the subcutaneous fat tissue. Biopsy was taken from the abdominal skin of an emaciated 84 y-o male patient. The fat cells are atrophic with decreased fat content. The intercellular space is gelatinous with accumulation of acid mucosubstances (H&E-3).



Serous fat atrophy (gelatinous transformation) of the subcutaneous fat tissue. Biopsy was taken from the abdominal skin of an emaciated 84 y-o male patient. The fat cells are atrophic with decreased fat content. The intercellular space is gelatinous with accumulation of acid mucosubstances (H&E-4).



Ultrastructure of serous fat atrophy (gelatinous transformation) of the subcutaneous fat tissue. Biopsy was taken from the abdominal skin of an emaciated 84 y-o male patient. The fat cells are atrophic with decreased fat content. In the non-fatty cytoplasm, glycogen particles are accumulated (TEM-1).



Ultrastructure of serous fat atrophy (gelatinous transformation) of the subcutaneous fat tissue. Biopsy was taken from the abdominal skin of an emaciated 84 y-o male patient. The fat cells are atrophic with decreased fat content. In the non-fatty cytoplasm, glycogen particles are accumulated (TEM-2).