The fat earliest deposited in the subendothelial layer lies within the cells. Cells having the same character as the mature connective-tissue cells of this layer are seen to have an accumulation of fatty material, often extending in a wedge-shaped mass at one or both ends of the nucleus, and for some distance from the nucleus. This fat first appears as fine discrete granules, and in cells containing a greater quantity of this material the fat is aggregated into larger masses or globules.

We have not been able to demonstrate that in this process of cell proliferation of the intima any of the fat-containing cells have been derived from the endothelial layer. We have observed repeatedly that the lining endothelium which so commonly is shed after death has produced a narrow layer of loosely attached cells upon the surface. However, there was no evidence that these proliferated cells entered into the formation of the thickened and fatty layer of the subendothelium.

In the later stages of fat accumulation within the subendothelial cells it is noted that these cells retain their shape and the nucleus remains in the centre until the cell substance is widely distended, almost to bursting, with the accumulation of fat. Cells of various shapes are seen—oval, spherical or spindle shaped. These same spindle cells when cut transversely appear fairly circular. In the still later stages the cells with their nuclei disappear and leave the fat in the interstitial spaces. Specimens are not infrequently seen in which a few circular or spindle-shaped spaces are filled with a fatty material. This fat then lies between the tissue fibres and cells, and naturally in this condition it is difficult to state its exact origin. However, as the process of gradual accumulation of lipoid substances can be observed, and as the degeneration of the cell may also be followed, it seems fair to assume that the free fat comes from cell disintegration.

During this period, in which the subendothelial cells show the accumulation of fat, the elastic fibres in the hyperplastic zone show the faint yellow tinge of a fatty change. At first the colour change appears to be diffusely spread through the fibre without the appearance of granules. Later, fine granules appear when it is difficult to determine whether these are within or only on the surface of the elastic fibres.

The changes in the musculo-elastic layer are of quite similar order to those in more superficial portions of the intima where changes, as above described, are being brought about. In the former tissue there is evidence that the interstitial spaces become wider and are filled with a homogeneous or finely granular débris. The cells in the musculo-elastic layer appear more prominent, so that this band of muscle fibres is more readily recognised than under normal conditions of the vessel. Whether an actual increase in the number of muscle cells takes place is hard to say, but it is apparent that the