

FRACTURE OF ARTERIES.*

OSKAR KLOTZ.

(From the Pathological Laboratories, University of Pittsburgh, Pittsburgh, Pa.)

Calcification of the media is one of the most common pathological processes found in the peripheral arteries. This condition is a degenerative process in which the tissue of the part is destroyed and replaced by an inert deposit of calcium salts. The extent of the deposit varies greatly. In its early stages we may see the antecedent degenerative changes in elastic fibers and muscle cells, followed by a gradual accumulation of calcium salts in the dead areas with the final development of a hard plaque visible to the naked eye. These patches of degeneration and deposit usually lie in the middle of the media, but again may be situated along the inner border close to the intima so that the process of calcification involves the internal elastic lamina. As the condition progresses the medial plaque continues to extend laterally in a circular fashion until an annular band encircles the artery. Such complete bands are not uncommon in the vessels of the legs and forearms.

These medial deposits are quite independent of inflammatory changes in the arterial wall, and they do not bear any direct association in their development with thickenings of the intima. In the absence of any associated pathological process in the other coats of the artery, as well as the lack of inflammation in the vicinity of the injured area, it would appear that the lesion is purely a degenerative one resulting from the stress, overstrain, and fatigue of the active components of the media. As we have said, it is the muscle tissue usually, and at times the elastic fibers, which show the earliest evidences of degeneration at a period before there is any precipitation of calcium salts. The muscle fibers often show deposits of fat droplets within them, and later a disintegration of their substance. The elastic fibrils become

* Received for publication May 26, 1916.