

from which the blood is effused, shall we have a corresponding development; be it areola tissue, be it periosteum, or be it cartilage; all may be presented from the same injury. As the serum is absorbed, the pain and swelling subsides; still a certain amount of heat and increased vascular activity may be observed in all the injured structures. The influence of this vascular activity upon the bone is to cause a softening of the extremities of the fractured portions. The increased supply of blood to the haversian canals, the true capillaries of bone, is to yield a larger amount of serous fluid to the lacunæ and canaliculi—the true nutritive apparatus of bone. By means of this inordinate supply of fluid to the fibrous intercellular element of the bone, it is softened, the earthy matter is dissolved, and being absorbed into the capillary vessels is removed from the structure, while after a time the animal matter, the fibrous element of the bone, is itself softened and dissolved by similar means. At this period we find the ends of the fractured bone not only softened but rounded off, so that all points and spiculæ are gradually removed, and the extremities of the bone are prepared for the true reparative process about to take place.

About the period at which the fractured bone has arrived at this condition, we find that the fibrine effused around the broken extremities of the bone, between the lacerated periosteum, and in the surrounding areola tissue, has become organized. The fibrous element constituting the new periosteum becomes hardened with a deposit of the salts of bone; these are incorporated into its structure and constitute the formation of bone in ligament. This becomes the *provisional callus*, as it is called. The extent of this callus will be proportioned to the exigencies of the case—the power of motion left to the fractured extremities of the bone, and the ability in the surrounding structures to supply the necessary pabulum, will regulate its amount. In the case of fracture of the neck of the thigh-bone without the capsular ligament this is often very great, and not unfrequently forms a very large and hard swelling around the hip. This callus by degrees becomes bone, but it is only a temporary expedient, a splint formed by nature to preserve the broken fragments immoveable and in close apposition until more perfect union by true bone shall occur. The amount of the formation of this provisional callus seems to be proportioned to the latitude of motion to which the fractured portions of the bone are liable, if this is but little, either from the nature of the location, or the perfection with which the surgeon applies his splints, then the amount is small; but should the liability to movement