

"patch," the effect of which upon the joint is practically the same as that of an adhesion. If this "pannus" affects only the margins of the trochlear surfaces then it is possible that only slight interference with joint function will result, but if this "pannus" grows well in, over the center of the articular cartilage, then the functions of the joint will be permanently impaired even should bony ankylosis not ensue. In the more virulent infections such as those that arise from direct septic contamination of joints or through pyæmic involvement, cartilage and bone are invaded simultaneously with the synovial membrane. The result of such processes is almost invariably a firm, bony ankylosis. Such in brief is the character of the gross changes occurring in the joints as a result of acute, subacute and chronic inflammation. A secondary result of the foregoing changes in almost every case is deformity and this ensues whether the joint becomes only partially or completely ankylosed. The effect of deformity is to add further disability to that already existent as a result of the capsular infiltration and adhesion. The cause of joint deformity in this class of cases is primarily joint irritation. In the earlier stages and in the more severe infections muscular spasm is early manifested. The distribution of the capsular infiltration is undoubtedly influenced to a considerable extent by the deformity attendant upon muscle spasm and therefore in those cases where spasm ceases and infiltration manifests a tendency to absorption and no serious erosions have occurred, it is always the extension of those joints that is slowest in returning.

Another type of joint disease characterised by impaired function in the affected articulations and deformity

is that spoken of as hypertrophic arthritis, or, according to the older nomenclature, osteo arthritis. This seems to be a condition disassociated from infections, direct or remote, and the essential changes within the joints are concerned with the cartilage about the margins of the articular surfaces. There is very little capsular involvement. Deformity characterizes these lesions, but is due to mechanical causes and not to any considerable extent to muscle spasm. It is only in the large joints of the locomotive apparatus and the spine that any serious disabling or debilitating effects are produced by this disease. The manner in which these effects are brought about will be discussed later on in this paper. At some length then we have considered the changes that are manifest within a joint concerned in an arthritic process and we have seen that whatever the fundamental cause may be there is a marked similarity in the results. For a moment let us now consider what effect deformity, which we have shown to be a direct outcome of all joint diseases, has upon the patient who harbors it and upon the disease which fosters it.

In the first place as to the patient who is handicapped by deformity. In the lower extremity the most serious deformities are at the hip and the knee though certain distortions of the foot more or less effectually interfere with the functions of the body as a whole. Another factor of vital importance in these cases concerns the question whether the deformity is accompanied by mobility or ankylosis. Where deformity and motion co-exist provided the arc of motion represents a reasonable proportion of the normal arc and the deformity is not too great, functional activity may not be materially interfered with under