

ologically significant of a particular infection has disappeared at the time of operation.

We come then to a consideration of the question, what is it that marks the difference in the various joint structures in the types of arthritis which we are called to see?

In some cases the capsular structures of the joint are the ones primarily, perhaps solely, affected. In others cartilage seems to suffer more than the capsular structures. In most cases both of these tissues are more or less involved. Repair can go on in the one until a pretty complete restitution to the normal has been attained, whereas in the other if the process goes beyond a very superficial involvement of the cartilage no real repair or restitution can take place. In a few instances the bone may be involved as well as the other tissues. In the acute cases it is at times possible to isolate specific bacteria from the joints by aspiration, or more certainly by removing some of the villi and cutting them into very fine pieces aseptically and from this material making cultures. The more subacute or chronic the case becomes the less certainty is there of being able to find any bacteria by cultural or other bacteriologic methods. Indeed, in certain of the chronic cases the only way possible to prove the bacteriologic cause of an arthritis is to strain for bacteria in the villi removed for histologic examination. In certain cases the only reason that one has for regarding a joint lesion as of bacteriologic or infectious origin is from the analogy of the tissue changes observed with those commonly noted in processes of proved bacteriologic origin.

Inasmuch as a good deal of the interest of those who are called upon to treat these cases must centre in the condition during the stage of its repair it is appropriate that we should devote a little time to the consideration of the histology of the repair process in joints, and here we have a better knowledge of what goes on than we possess in regard to the initial pathological lesions of chronic arthritis. In the acute infections of joints the synovia is first involved. If the infecting agent is sufficiently toxic it destroys the serous surface of the membrane in areas of greater or lesser size, just as inflammatory processes in the peritoneal cavity destroy the serous surfaces there and give opportunity for the formation of adhesions between apposed surfaces. Up to a certain point the serous erosions may be repaired in a joint as in the peritoneum, but very extensive or very deep erosions may not be repaired. In animals the complete restitution of synovial membrane may take place, but not in man. If raw surfaces are left in contact with each other the subserous tissues, which are composed of connective tissue cells in an active stage of proliferation because of the toxicity of the infecting agent, immediately seek to bridge over the space intervening between the apposed serous erosions, and the result is that an adhesion forms.