

It is also to be noted that not only is the onflow of the bile in its passages influenced by the activity and character of the secretion, but also by the vigour of the peristaltic action of the muscular coat of the ducts, and by the pressure made directly on the liver and gall bladder by the movements of adjacent organs, notably by the excursions of the diaphragm and by the contraction of many of the abdominal muscles. Experiments have demonstrated that the flow of bile is much accelerated by vigorous and deep respiratory movements; a very marked increase in the amount of bile poured out takes place after waking and rising in the morning.

Having thus, very imperfectly I feel, reviewed the pathological and physiological facts with which we have to deal, let me briefly suggest a few broad lines of treatment.

In all affections of the biliary passages it is of the first importance that the blood carried to the liver cells by the portal vein should contain no irritating drug or toxin which after its secretion in the bile may have a tendency to maintain or increase irritation of the mucous lining of the ducts. To this end the dietary must be supervised and made to conform to the digestive capacities of the patient. No hard and fast lines can be laid down, but each individual must be carefully considered as regards his habit of body, his capacity for the digestion of the different articles of food, the amount of exercise he is able to take and the nature of his work. An all-important point is that the diet list should be a simple one; simplicity means facility of digestion. It is of the utmost importance to secure and maintain a healthy condition of the gastro-intestinal mucus membrane. To this end the occasional employment of a gastro-intestinal alterative and laxative, such as mercury, euonymin, podophyllin, or rhubarb, followed by an alkaline mineral water, will, I think, be of much service. For many reasons constipation should not be permitted. In Europe the waters of the Sprudel Springs in Karlsbad are highly esteemed. They are alkaline, laxative, and have a temperature of 110-115° F. At the same time it appears to me desirable that, except in conditions of actual blocking of the ducts, the free secretion of a normal watery bile is to be encouraged—to favour this the meals should be regular and at not too long intervals, and the daily dietary should contain as large an amount of fat as can be taken without disturbing digestion. Fat more than any other element of the diet stimulates the secretion of the bile, and at the same time acts as an efficient intestinal antiseptic. The free use of a pure water between meals should also be encouraged. The great majority of persons suffering from affections of the biliary passages will be found to take an insufficient amount of water to drink.