of the infectious agent or microorganism and individual resistance. Acute infections of the biliary passages and of the gall-bladder by virulent bacteria produce such local symptoms and manifestations that the diagnosis is comparatively easy. In the opposite conditions, however, where the infection is more insidious in its onset and chronic in its course, and the infectious microorganism is of low virulence, these cases are not recognized; the lesions and symptoms are so slight that faulty diagnoses are made, and the resulting conditions are overlooked, misunderstood and misinterpreted.

The major symptoms in these cases are the result of obstruction and inflammation of the biliary passages or gall-bladder ducts. In the same infection, whether markedly virulent or less virulent, the same etiology will lead to cholangitis, cholecystitis and cholelithiasis, either singly or combined.

Of the infectious agents in these cases, the *bacillus coli communis* and the typhoid bacillus are the most frequent; but the staphylococci and streptococci are also found, either alone or as mixed infections. Many cases of biliary infection have been noted complicating pneumonia and influenza, and based upon present knowledge of these infectious agents, we would consider the pneumococcus and the *bacillus influenzae* as being the responsible etiological factors. In addition, some etiological importance attaches to the anaerobic bacilli which abound in the intestines.

For a clearer understanding of the methods of infection, I quote the following from Kelly's article on diseases of the gall-bladder and biliary ducts in Osler's System: "The Pathways of Infection: The pathways whereby the biliary tract may become infected are: (1) the diverticulum of Vater and the common bile duct; (2) the portal circulation; (3) the systemic circulation; (4) the lymphatic circulation; and (5) directly thru the wall of the gall-bladder or the biliary ducts from the peritoneum." These pathways of infection are merely mentioned to illustrate how easy it is for local infections to occur from systemic disease, especially in such susceptible structures as the gall-bladder and its ducts.

With few exceptions every gall-bladder disease begins as a medical case, and the recognition of the initial attack of cholecystitis is the period for expert and rational medical therapy; but the unrecognized and neglected attacks of cholecystitis in every instance lead to the formation of gall-stones. It doubtless requires months of catarrhal inflammation of the gall-bladder for the actual formation of stones, therefore active and persistent treatment is indicated for weeks or months after every attack of cholecystitis.

Just how long we should persevere with medical treatment depends upon the conditions present in each case. No absolute rules can be made generally applicable. So long as the patient is in good condition, free of fever and pain, we can afford to temporize. Continuous loss of weight, regular, tho slight, afternoon rise of temperature, or pronounced debility, may be considered imperative indications for operative intervention. The waiting period may extend ordinarily from one to three months. To prolong medical treatment beyond that is to subject the patient in some of the virulent cases to the danger of permanent damage to the liver structures, and to increased risk during the operation itself. Rolleston advises persistent medical treatment even in the presence of recurrent attacks of fever