

round the left side or even to the renal and scapular regions. Fat and muscle fibres may be noticed in the motions as soon as the obstruction to Wirsung's duct is complete, and the pancreatic reaction will be found in the urine. If gall-stones be not the cause, there may be merely an aching, or painful attacks not at all pronounced, or the symptoms may come on painlessly, associated with dyspepsia, and with slight jaundice soon becoming more marked. In such cases, if the swollen pancreas tightly embraces the common bile duct the gall-bladder may dilate and give rise to a suspicion of cancer of the pancreas, which the rapid loss of flesh will tend to confirm. In the latter stages pale or white and bulky motions may be passed and a hemorrhagic tendency may be noticed. The liver is usually enlarged when the common bile duct is tightly gripped, and in several cases I have found cirrhosis of the liver, doubtless due to the long-continued stagnation of septic bile in the ducts. I have seen well-marked enlargement of the spleen on four occasions. In one patient the fever and the enlarged spleen gave rise to a suspicion of ague, the organisms of which were said to have been found in the blood, and on several occasions the repeated rigors have led to the diagnosis of malarial fever.

In 60 per cent. bile was present in the urine. In 40 per cent. calcium oxalate crystals were found. In 4 per cent. the oxalate crystals were associated with bile. In none of my cases was glycosuria found, though in two cases it developed several years later. Opie reports having found glycosuria in one out of twenty-two cases. Glycosuria only occurs as a very late symptom. Death may occur from asthenia, due to long-continued jaundice, or from some intercurrent disease, predisposed to by the loss of flesh and debility.

The symptoms of pancreatitis may be conveniently classified under (1) digestive symptoms, (2) physical signs, (3) metabolic symptoms, (4) symptoms artificially produced.

1. *Digestive Symptoms*: (a) Stetorrhea or fatty stools, (b) azotorrhea or faulty digestion of albuminous foods, (c) sialorrhea, (d) diarrhea, (e) dyspeptic disturbances, (f) emaciation, (g) nausea and vomiting.

2. *Physical Signs*: (a) Presence of swelling or tumor, (b) fever, (c) pain and tenderness with muscular resistance, (d) pressure on adjacent organs, (e) hemorrhage, (f) jaundice, (g) fat necrosis (evident only when the abdomen is opened).

3. *Metabolic Symptoms*: (a) Glycosuria, (b) other urinary changes.