

to be dammed back into the pancreas; in 3 and 4 the patient may be saved from this danger; while in 5 and 6 only a small portion of the pancreas at most will be involved. In the normal case, however, if the stone is large enough to block the entrance of both ducts into the ampulla the patient will be saved from the danger of pancreatitis. This is probably what occurred in the case here reported.

It is not enough, however, to consider only the mechanical problem. One must ask is the pancreatic secretion not as likely to prove the stronger and force the bile back up the common duct rather than that the bile should force the pancreatic secretion back up the duct of Wirsung? Herring and Simpson (15) have shown that in cats, dogs and monkeys the pressure of the bile and pancreatic juice are practically equal in the same species. But, what has a practical bearing on the question in hand, they found that the curve of pancreatic pressure differs from the curve of bile pressure in the greater rapidity with which it rises and falls. "Both the rate of secretion and the rate of absorption are greater in the pancreas than they are in the liver." The total quantity of pancreatic juice secreted before the bile is secreted would not be sufficient to cause a flow in the bile-duct back to the liver. "Pancreatic secretion," they say, "is absorbed at low pressure, and it is probable that the secreting cells, when the alveolar pressure has reached a certain point, get rid of their secretion by turning it into the lymph stream." Thus the pressure of the bile being maintained for a longer time than that of the pancreatic secretion; and, given the proper anatomical conditions, it is natural to suppose that the bile will pass along the ducts into the pancreas, and will there cause an irritation of the lymphatics of the pancreas and thus cause a pancreatitis. Moreover, since the bile, when obstructed, is usually infected, it will cause an actual inflammation passing on in some cases to abscess formation.

There would thus appear to be good reason to accept the clinical view that many cases of pancreatitis are caused by gall-stone obstruction of the terminal portion of the common bile-duct. How necessary it would appear therefore in all cases