

THE ARTERIAL SUPPLY TO THE DUODENUM

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AFTER having carefully injected and dissected four post-mortem specimens of the duodenum and surrounding structures I find they consistently show an arrangement of the duodenal arteries not hitherto described in textbooks of Anatomy and which I wish to report.

In all four dissections the superior and inferior pancreatico-duodenal arteries form a double chain of anastomosis along the concavity of the duodenum; one chain passing ventral to the common bile duct and the other dorsal to it.

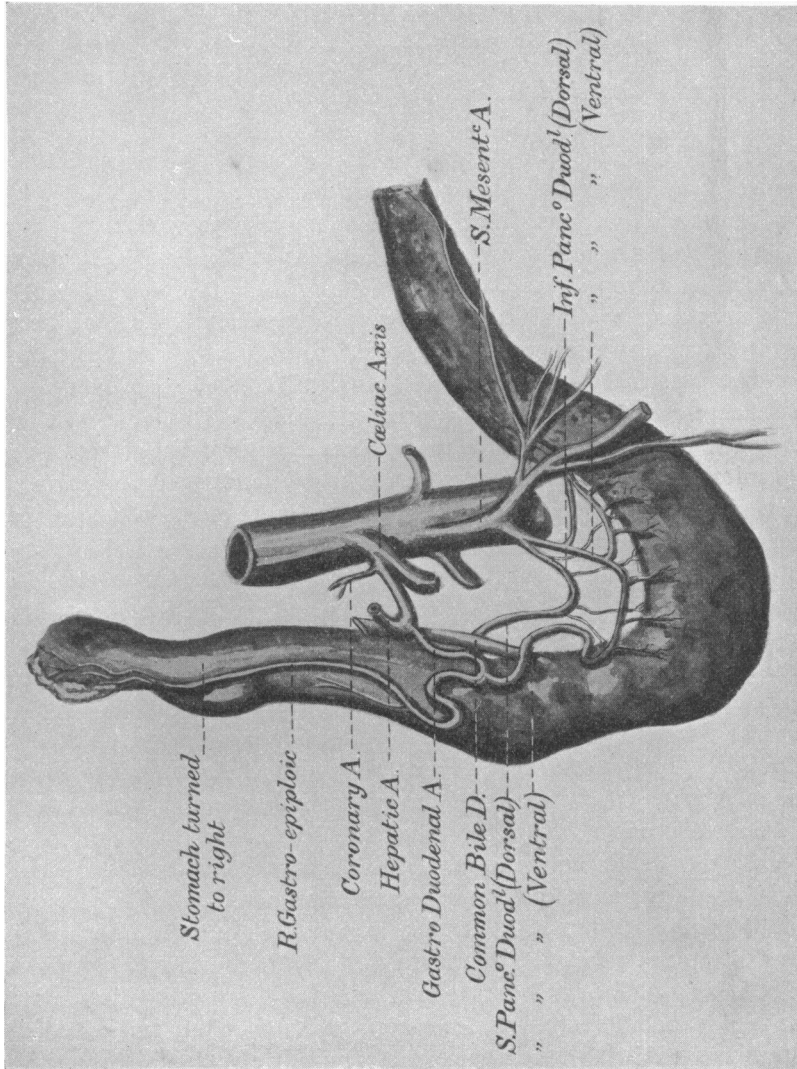
Starting from the right side the gastro-duodenal artery gives off a ventral and a dorsal superior pancreatico-duodenal branch, either before or immediately after the right gastro-epiploic artery is given off. Of these the ventral branch, which passes in front of the bile duct, is the one which is always shown in the textbooks; but the point upon which I want to insist is that there is another, quite as large, dorsal branch, hidden by the head of the pancreas and passing behind the common bile duct and the accessory pancreatic duct of Santorini, when the latter is present. These two arteries run along the concavity of the second and third parts of the duodenum, about a quarter of an inch from the gut to which they give numerous straight branches of supply.

There is nothing to show where the arcades cease to be superior pancreatico-duodenal and begin to be formed by the inferior pancreatico-duodenal; they are of the same calibre throughout their course and, for this reason, the area of supply of these arteries is of no real morphological value in determining the place at which the foregut ends and the midgut begins. The inferior pancreatico-duodenal artery comes off the back of the superior mesenteric artery while the latter is still lying behind the neck of the pancreas, about two inches above the third part of the duodenum. Since its origin lies about the same horizontal level as that of the superior pancreatico-duodenal, it hardly deserves the title of inferior save that its blood is carried to a rather lower part of the intestine. It almost at once divides into a dorsal and a ventral branch which run vertically downward behind the continuation of the superior mesenteric artery. In their passage downwards the two arteries lie about half an inch to the left of the fourth part of the duodenum and thus complete the dorsal and ventral arcades.

The arcades are specially concerned with the supply of the more dependent part of the duodenal loop; the first part and the upper half of the duodenum are supplied mainly by the right gastro-epiploic artery and do not seem to enjoy nearly so free an anastomosis as that provided by the arcades to the remainder of the duodenum.

The fourth part of the duodenum is supplied by branches which come off the left side of the superior mesenteric artery.

The practical outcome of my dissections is that surgeons must expect quite as large an artery just behind the common bile duct as there is just in



front of it, also it is noteworthy that the earlier part of the duodenum is not supplied in the same way as the succeeding parts nor have its vessels so free an anastomosis. Furthermore, it is apparent that morphologists cannot use the arterial supply to determine the limits of the fore and mid gut.