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Study of Origin of Inferior Pancreatico Duodenal Artery

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Abstract: ***Arterial anatomy of the pancreas is essential to locate the blood vessels in treatment and surgeries of various conditions of the organ e.g.-Arterial infusion chemotherapy for carcinomas of the pancreas and stem cell infusion in interventional therapy of diabetes mellitus. Fifty specimens were studied. In the present study the inferior pancreatico duodenal artery, out of fifty specimen dissected in forty six specimen had the origin from the superior mesenteric artery, in two specimen, the artery is originating from the common hepatic artery and one is originating from the first jejuna branch of superior mesenteric artery. The study on vascular anatomy of pancreas helps in reconstruction surgeries.***

Keywords: first jejunal branch of superior mesenteric artery, common hepatic artery, inferior pancreatic duodenal artery.

1. Introduction

Pancreas is richly supplied with blood by its weight and is unique in having dual blood supply by coeliac trunk and superior mesenteric artery. Vascular anatomy of pancreas helps in reconstruction surgeries. Arterial anatomy is essential to locate the blood vessels in treatment and surgeries of various conditions of the organ e.g.-Arterial infusion chemotherapy for carcinomas of the pancreas and stem cell infusion in interventional therapy of diabetes mellitus.

The inferior pancreatico duodenal artery arises from the superior mesenteric artery or its first jejunal branch, near the superior border of the third part of the duodenum. It usually divides directly into anterior and posterior branches. The anterior branch passes to the right, anterior to the lower border of the head of pancreas and runs superiorly to anastomose with the anterior superior pancreatic duodenal artery. The posterior branch runs posteriorly and superiorly to the right, lying posterior to the lower border of the head of the pancreas and anatomose with the posterior superior pancreatico duodenal artery. Both branches supply the pancreatic head, its uncinate process and the second and third part of the duodenum[1].

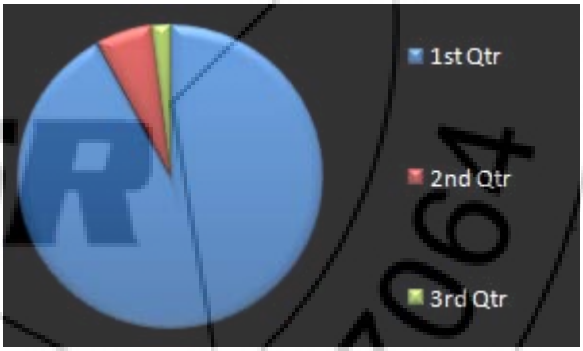
2. Materials and Methods

The study was done in fifty human specimens obtained from embalmed cadavers during routine dissection studies. Forty specimens were studied from JSS Medical College Mysore, Ten specimen were studied from DM-WIMS Wayanad Kerala, Dissection procedure was followed as in Cunningham's manual of dissection. The pancreas with duodenum and a part of abdominal aorta were dissected to identify the origin of superior mesenteric artery and its branches. The same was photographed.

3. Observation and Results

Table 1: Showing variation in the origin of inferior pancreatic duodenal artery

S. No	*Origin*	*No. of. Specimen*	*Percent*
1	Superior mesenteric artery	46	92%
2	Common hepatic artery	03	6%
3	First jejunal branch of Superior mesenteric artery	01	2%



Graph 1: variation in the origin of inferior pancreatic duodenal artery.

1st qtr: Origin from superior mesenteric artery.
2nd qtr: Origin from common hepatic artery.
3rd qtr: Origin from first jejunal branch of superior mesenteric artery.

Figure 1: (1) anterior arcade, (2) Antero-superior pancreatic-duodenal artery, (3) Gastro duodenal artery, (4)

Anterior inferior pancreatic-duodenal artery, (5) common hepatic artery, (6) superior mesenteric artery, (7) splenic artery.

The figure 1 shows the origin of inferior pancreatic-duodenal artery from the common hepatic artery. In the present study inferior pancreatic-duodenal artery originates from the superior mesenteric artery in 92% of the cases, in 6% of the cases it is originated from the common hepatic artery and in 2% of the cases it is originating from 1st jejunal branch.

4. Discussion

In the present study the inferior pancreatic duodenal artery, out of fifty specimens dissected in forty six specimens had the origin from the superior mesenteric artery.

Gray, [1] Uflacker[2] and Rohini Motwani[3] are in par with the present study.

Michel[4] has described that its point of origin may be high, low or intermediate, right or left side from the superior mesenteric artery.

Woodburn R.T.[5] has described this type of origin as 97%.

Ziegler has described the origin of pancreatico duodenal artery from superior mesenteric artery in 50% of the cases. Falconer and Griffith[6] have reported this type of origin as 37% in their studies.

In the present study in two specimens the inferior pancreatic duodenal artery is originating from the common hepatic artery and in one it is originating from the first jejuna branch of superior mesenteric artery. Michel[4] describes that in one specimen inferior pancreatic duodenal artery arise from first jejunal branch of superior mesenteric artery.

This knowledge of variation in origin of inferior pancreatic duodenal artery helps in vascular surgeries of the pancreas and duodenum. Wrong ligation may be minimized by this knowledge of variations and may be very useful for surgeons.

5. Conclusion

Out of fifty specimens studied, inferior pancreatic duodenal artery had the origin from superior mesenteric artery in 92%, common hepatic artery in 6% and first jejunal branch of superior mesenteric artery in 2%.
Vascular anatomy of pancreas helps in reconstructive surgeries. Arterial anatomy is essential in locating the blood vessels in treatment and surgeries of various conditions of the organ.

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