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Variations in origin of inferior pancreaticoduodenal artery

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Abstract---Coeliac trunk and Superior Mesenteric arteries are very much susceptible to variations and were described by Tandler in 1904. Abdominal aorta branches are classified as single double or visceral parietal. Double visceral branches are middle suprarenal, renal and testicular arteries and single visceral branches are coeliac trunk, superior mesenteric and inferior mesenteric arteries. **Materials and Methods:** After obtaining ethical committee approval, we observed the origin, course and branching pattern of pancreaticoduodenal arteries in 50 cadavers kept for dissection from 2019-2022 in Rohilkand Medical College and Hospital and Ayaan Institute of Medical Sciences. **Results:** In a male cadaver aged approximately 60 years, we observed that inferior pancreaticoduodenal artery is absent. In another male cadaver aged about 70 years, we observed an additional inferior pancreaticoduodenal artery. In remaining specimens, we observed the branching pattern very much normal.

Keywords---artery, pancreaticoduodenal, coeliac trunk, superior mesenteric artery.

Introduction

Coeliac trunk and Superior Mesenteric arteries are very much susceptible to variations and were described by Tandler in 1904, which are attributed to embryogenesis disorders.¹ Abdominal aorta branches are classified as single

double or visceral parietal. Double visceral branches are middle suprarenal, renal and testicular arteries and single visceral branches are coeliac trunk, superior mesenteric and inferior mesenteric arteries. Many studies exposing the variations in branches of aorta have been conducted so far.² Awareness of topographical anatomy of pancreas is always imperative to avoid or limit the risk of vascular surgery, while performing, invasive techniques like coeliacography and chemoembolization of pancreatic and liver tumors.³

Materials and Methods

After obtaining ethical committee approval, we observed the origin, course and branching pattern of pancreatico duodenal arteries in 50 cadavers kept for dissection from 2019-2022 in Rohilkand Medical College and Hospital and Ayaan Institute of Medical Sciences. Cadavers of age group 25-50 were included in the study and cadavers with death due to past history of pancreatic diseases were excluded from the study.

Results

In a male cadaver aged approximately 60 years, we observed that inferior pancreatico duodenal artery is absent. In another male cadaver aged about 70 years, we observed an additional inferior pancreatico duodenal artery. In remaining specimens, we observed the branching pattern very much normal.



Figure 1 : Inferior pancreatico duodenal artery is absent in this specimen

SMA – Superior Mesenteric artery,

1 – a common trunk from SMA

2 – transverse branch to the body of pancreas.

3 – Left colic artery. 4 – middle colic artery.

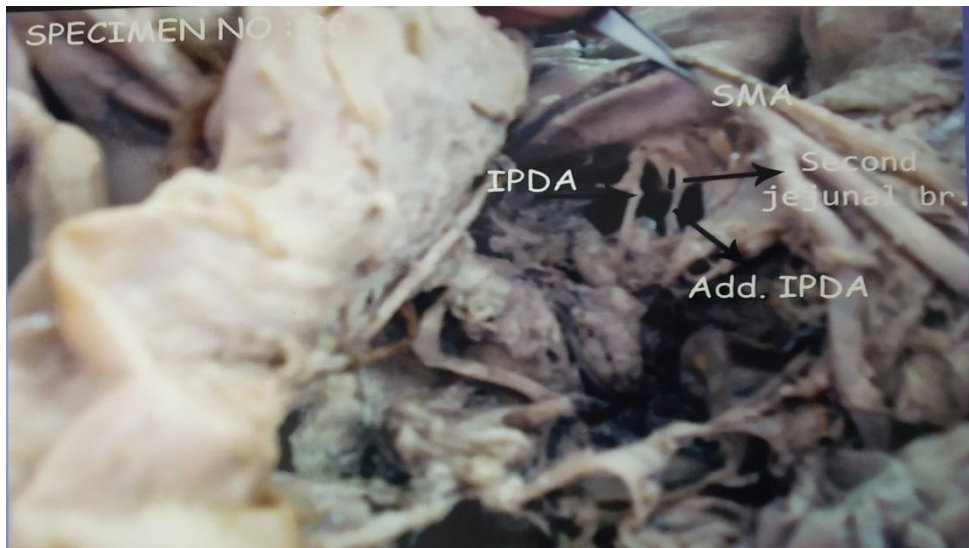


Figure 2 – Presence of Double IPDA

Discussion

Anatomical variations of the visceral arteries relating to coeliac trunk and superior mesenteric artery are common and well reported in literature. Reported common variations include absence of coeliac trunk, spleno mesenteric trunk.⁴ Another variation regarding mesenteric arteries is origin of a common mesenteric artery.⁵ Hema Malini reported quadrification of coeliac trunk with dorsal pancreatic artery. Where as in our study, we observed that inferior pancreaticoduodenal artery is originating from 2nd jejunal branch.⁶ Shoma Alban et al, in 2018 reported the origin of IPDA (Inferior Pancreaticoduodenal Artery) from 1st jejunal artery. In our study, we observed that additional IPDA is coming from 2nd jejunal branch which is almost same as findings of abovementioned author.⁷ Sreeja Sanampudi, reported origin of inferior pancreaticoduodenal artery from two different sources namely, middle colic artery and a replaced right hepatic artery.⁸

Conclusion

Accurate and proper knowledge of variations in blood vessels supplying pancreas is very much need of the hour in surgical, oncological and interventional procedures for surgeons. This is in order to prevent any complications which may prove fatal sometimes. Accessory arteries presence shall provide collateral circulation, which is in turn, helpful in transplant surgeries. Complex developmental stages may be attributed to variant vascular branching pattern.⁹

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