



Stomach Preserving Distal Pancreatectomy with Celiac Axis Resection: The Benefit and Challenge of a Replaced Right Hepatic Artery

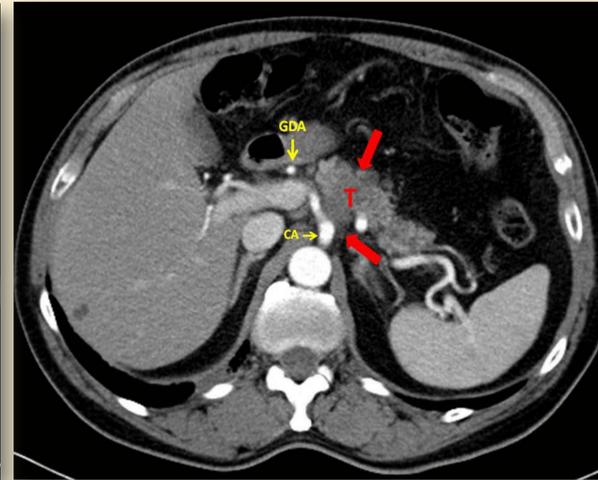
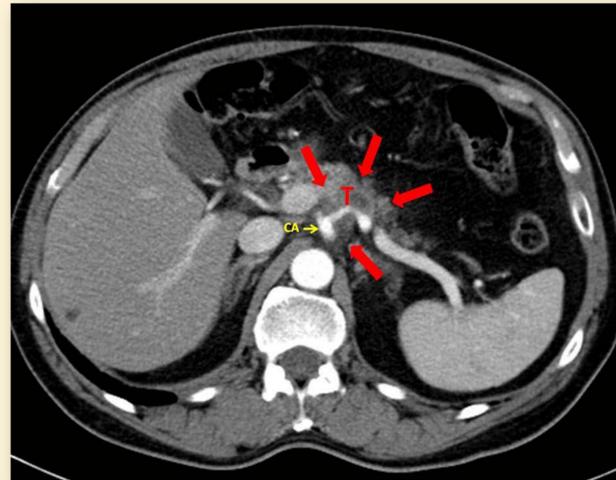
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Introduction and Background

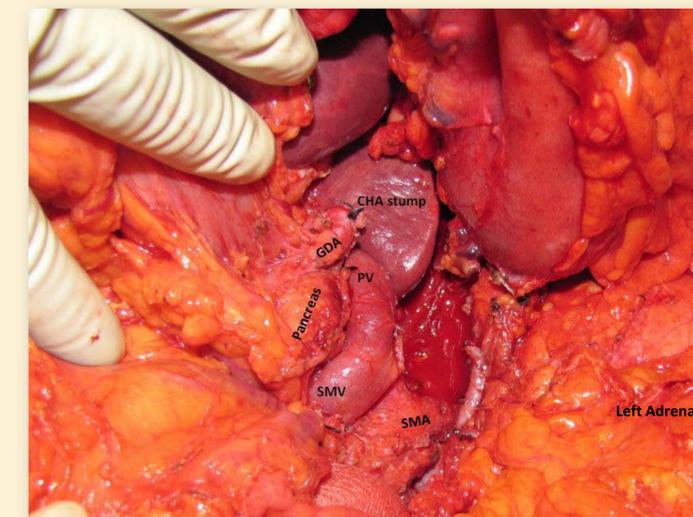
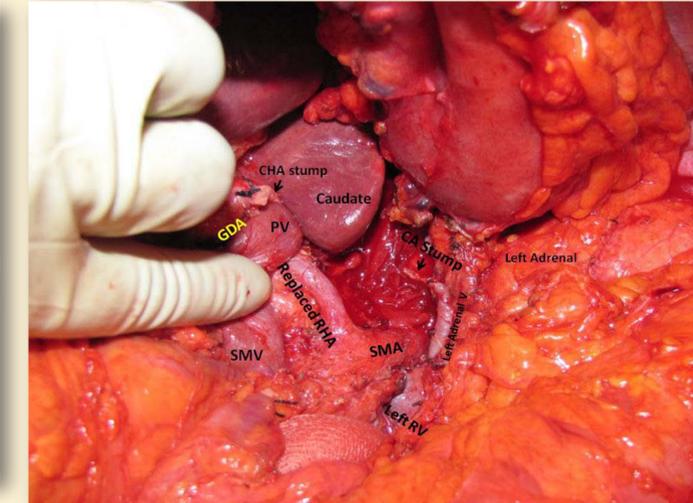
- Patients with pancreatic body tumors typically present with advanced stage and have a lower resectability rate than those with pancreatic head tumors (1). Surgical resection with negative margins represents the only chance for cure for these patients (2).
- The feasibility and safety of Celiac Axis (CA) resection with Distal Pancreatectomy (DP-CAR) and Total Gastrectomy was first introduced by Appleby in 1953 for locally advanced gastric carcinoma (3).
- In 1991 Hishinuma, et al performed a modified Appleby procedure for locally advanced pancreatic tumors with stomach preserving DP-CAR in two cases (4).
- Aggressive surgical approaches (including DP-CAR) have increased the resectability rate for pancreatic body tumors from 29% to 36% (5).
- After CA resection, the stomach and liver will be supplied through collateral pathways by way of the superior mesenteric artery (SMA), the pancreaticoduodenal arcades, and the gastroduodenal artery (GDA) feeding the hepatic and the right gastroepiploic arteries.
- Although a replaced right hepatic artery anatomical variant is considered favorable for this approach, its preservation represents a significant challenge during the dissection of the SMA in the retroperitoneum.

Case Report

- A 71 year old male patient with locally advanced pancreatic body cancer involving the CA was referred to our institution after being deemed unresectable.



CT scan: Locally advanced Pancreatic body tumor (T) involving the CA. Note the Replaced RHA and the well developed GDA



Operative field after resection: Celiac Axis (CA), Right Hepatic Artery (RHA), Gastrodoudenal Artery (GDA), Common Hepatic Artery (CHA), Superior Mesenteric Artery (SMA), Superior Mesenteric Vein (SMV), Renal Vein (RV)

Operative Technique

1. Complete mobilization of the stomach, spleen and the pancreas (left medial visceral rotation) until the origin of the SMA identified.
2. Careful dissection of the CA, CHA-GDA junction and SMA before any irreversible transection is attempted.
3. The CHA is clamped to check the flow to the left liver via the proper HA through the GDA.
4. The replaced RHA is carefully identified at its origin off the SMA and dissected free.
5. Transection of the pancreas to the right of the body tumor over the Portal Vein (PV)-Superior Mesenteric Vein (SMV) confluence.
6. The Splenic Vein (SV) transected at its junction with the SMV.
7. The surrounding lymph node and nerve plexus were all removed en bloc with the tumor.

Conclusions

- DP-CAR for locally advanced pancreatic body tumors can be safely performed in selected patients with the absence of distant disease spread.
- Careful preoperative assessment and patient selection is necessary.
- Familiarity with the complex anatomy and anatomic variation is a key for safe resection to avoid common postoperative complications such as ischemic gastropathy and hepatic necrosis.

References

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